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S****ARMED SERVICES VOCATIONAL APTITUDE  
BATTERY (ASVAB): ANALYSES OF DIFFERENTIAL  
ITEM FUNCTIONING ON FORMS 15, 16, AND 17****John R. Welsh, Jr.  
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**ARMED SERVICES VOCATIONAL APTITUDE BATTERY (ASVAB):  
ANALYSES OF DIFFERENTIAL ITEM FUNCTIONING  
ON FORMS 15, 16, AND 17**

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## SUMMARY

This study reports the analyses of data from the Initial Operational Test and Evaluation (IOT&E) of ASVAB Forms 15, 16, and 17 to investigate the occurrence of differentially functioning items on the power subtests and to examine the effects of sample size on five indices of differential item functioning (DIF).

Review of the literature indicated a large number of DIF indices based on differing definitions. This study used the Camilli's Full Chi-Square index based on traditional item statistics and the Mantel-Haenszel Chi-Square and Mantel-Haenszel Odds Ratio based on conditional item-to-total test score relationships. Two of the five indices were based on Item Response Theory (IRT), specifically, the three parameter logistic model. Estimates of the a, b, and c parameters were made using LOGIST5 in two random samples and were used to compute Lord's Chi-Square and the Modified Sum of Squares indices of DIF. These IRT indices were compared to the other three indices in different random samples of the same sizes, for the same comparisons.

Four comparison groups were selected. A White-White baseline comparison group was used for all five indices in order to determine chance levels of the occurrence of DIF for each of the five indices. White-Black, White-Hispanic, and male-female comparison groups were used to examine for DIF on the power items of the ASVAB.

The results of this study indicate that ASVAB Forms 15, 16, and 17 power subtest items are relatively free of DIF. The General Science subtest tended to have the most DIF items, but the number of DIF items never exceeded three on any of the four versions of General Science subtest. DIF items tended to occur more often with the gender comparisons, although the occurrence of gender-related DIF on the Auto-Shop, Mechanical Comprehension, and Electronics Information subtests was minimal.

The results indicated that all five indices were consistent for sample sizes of 500, 1,000, and 2,000. The intercorrelation between the Mantel-Haenszel Chi-Square and Odds Ratio, and Camilli's Full Chi-Square was dramatically reduced in the N = 100 sample size. The results indicated that the Mantel-Haenszel Odds ratio should probably not be used with sample sizes of 100 cases or less.

## PREFACE

This research and development effort was conducted under Contract No. F41689-87-D-0012, Task 12, Differential Item Functioning on ASVAB Forms 15, 16, and 17.

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## THE ARMED SERVICES VOCATIONAL APTITUDE BATTERY (ASVAB): ANALYSES OF DIFFERENTIAL ITEM FUNCTIONING ON FORMS 15, 16, AND 17

### I. INTRODUCTION

The investigation of test items that function differently for subgroups in the population is a central concern for test developers. The term Differential Item Functioning (DIF) is used instead of the more traditional term of item bias which has emotional as well as technical connotations. Holland and Thayer (1986) have proposed the use of the term Differential Item Functioning to avoid ambiguity and confusion of definition.

The consequences of differentially functioning items are dependent on the number of differentially functioning items, the subgroups affected, the nature of the test (the type of test: personality test, aptitude test, or achievement test, etc.), the characteristics of the test (the reliability and validity of the test instrument), and the uses of the test. Division 14 of the American Psychological Association (APA) (Society for Industrial and Organizational Psychology) in the Principles for the Use of Personnel Selection Tests (1987) states that a primary concern is that aptitude tests used for selection and classification be validated for meaningful, relevant criteria. Stated another way, performance on the test should be directly related to some relevant criterion (SIOP, 1987).

A frequently used and relevant criterion for the Armed Services Vocational Aptitude Battery (ASVAB) is success in military technical training. As part of the validation process, predictors and criteria are examined periodically for subgroup bias in the military personnel enlisted selection and classification testing systems. This type of analysis of test bias or test equity takes place at the test score-level when examining a test or testing system. More recent examination of test bias in the literature has focused on the DIF of the test item. The Standards for Educational and Psychological Testing (APA, 1985) stresses examination of bias at the item level in Standard 3.5:

When selecting the type and content of items for tests and inventories, test developers should consider the content and type in relation to cultural backgrounds and prior experiences of the variety of ethnic, cultural, age and gender groups represented in the intended population of test takers. (p. 26)

Removing items with DIF is also desirable for purely psychometric reasons. Minimizing or eliminating DIF may be viewed as a way of maximizing the content and construct validity of an aptitude battery. By identifying and avoiding item content that consistently functions differentially in ethnic and gender subgroups, one minimizes error variance in test scores--variance attributable to the measurement of irrelevant constructs. Minimizing or balancing DIF within a given test will necessarily minimize any score-level difference, thus improving the apparent fairness of the test itself. While the elimination of DIF is useful to test developers, the construction of tests designed for minimal DIF benefits everyone, including test users and test takers.

In recent years the study of DIF has resulted in a proliferation of DIF indices. Most are an extension of item-analytic procedures that examine the item-level performance of groups with their total test score performance held constant across groups. Berk (1982) provides an excellent summary and handbook of a broad variety of test and item bias detection procedures. DIF indices can be divided into three broad categories: (a) those based on traditional item-analytic statistics, (b) those based on the conditional item-to-total test score relationship and (c) those based on Item Response Theory (IRT).

Among the traditional indices are the Camilli's Full Chi-Square Index (Camilli, 1979; Ironson, 1982), and the Chi-Square Correct (Scheuneman, 1979). Those based on the conditional relationship of the item-to-the-total test score are similar to the traditional indices in that they are based on  $2 \times 2$  contingency tables and include the Mantel-Haenszel Chi-Square and the Mantel-Haenszel Odds Ratio (Holland & Thayer, 1986). Examples of DIF indices based on IRT are Lord's Chi-Square (Lord, 1980) and the Modified Sum of Squares (Linn, Levine, Hastings, & Wardrop, 1981; Shepard, Camilli, & Williams, 1984). These two indices, while sharing the distinction of being IRT-based, are very different in nature. The Modified Sum of Squares represents the distance between reference and comparison, or focal groups, on an item characteristic curve at observed theta (ability) levels. There are no generally accepted tests of statistical significance for the Modified Sum of Squares measure of DIF. In contrast, the Lord's Chi-Square employs a test of significance for comparing the IRT item parameters across ethnic or gender groups (Lord, 1980).

There have been a number of studies that compare the different types of DIF indices (Hills, 1989; Linn et al., 1981; Shepard et al., 1984), but only one study compared DIF indices calculated for items on the ASVAB (Linn, Hastings, Hu, & Ryan, 1988). Linn et al. (1988) compared 27 different indices of DIF in a study of ASVAB Form 14 items. Their results indicated that 2 of the 27 indices, the Mantel-Haenszel Odds Ratio and the Modified Sum of Squares, provided the most stable indexes of differential item functioning in their study. The consistency of results provided by the Mantel-Haenszel Odds Ratio and the

Modified Sum of Squares was in relative contrast to other indices which showed high variability in the degree to which they indicated high or low differential item functioning in the subgroups they investigated. There was no indication from the Linn et al. (1988) results as to the effect of sample size, except the mention of the power of the Chi-Square indices to detect small and practically minor differences in item functioning with the large sample sizes they had available.

Prior to Linn et al. (1988), a number of studies examined the equity of the ASVAB at the item-level, but none used any of the more common DIF indices currently in favor among item-bias researchers. These studies were all done on ASVAB 8a using the data set from the Profile of American Youth Study (DoD, 1982). The Profile of American Youth Study involved the administration of the ASVAB 8ax (an experimental version of ASVAB 8a) to a stratified random probability sample of American youth, males and females, 16 to 23 years old. Reports by Bock and Moore (1984), Bock and Mislevy (1981), and Mislevy and Bock (1981) indicate that the ASVAB 8a was relatively free from item-level bias, and that test item cultural bias (for ethnic and gender subgroups) in ASVAB 8a was not apparent (Bock & Mislevy, 1981). All these authors used IRT analyses of the test-item thresholds with broad, categorical ability groups.

The subject of item-level bias in the ASVAB was discussed by Bock, Gibbons, and Muraki (1985). These researchers performed a full-information factor analysis on a 10% random sample of the ASVAB 8a Profile of American Youth data set. They report some item-by-gender interaction in the General Science (GS) subtest. Results from their study which have particular relevance to the present study are that five of the eight ASVAB power subtests (GS, AR, WK, AS, and MK) contain at least two identifiable factors. Multidimensionality of a cognitive test probably has more of an adverse impact on indices based on IRT theory than those based on the more traditional statistics. However, violations of the assumption of homogeneity (which underlies the Chi-Square tests for DIF) may obscure DIF where it exists, or conversely, may falsely flag items as exhibiting DIF for certain subgroups.

A recurring issue in the DIF literature pertains to sample size. Shepard, Camilli, and Williams (1985) reviewed the literature on a number of DIF indices and recommended DIF indices for use with small sample sizes for ethnic or gender subgroups. When comparison subgroup sample size is not a problem ( $N > 1,000$ ), Shepard et al. (1985) recommend IRT approaches, and in particular Lord's Chi-Square and the Modified Sum of Squares indices. The full Chi-Square and the "Z-score" or pseudo IRT method proposed by Camilli (1979) and by Linn and Harnisch (1981) were recommended as good approximations to the IRT approaches when sample sizes are less than 300.

Ironson (1982) has recommended that any index of DIF control for the ability of the groups in question. The implication is that any DIF index should examine for differential item functioning at the same level of ability for both comparison groups. Both the Camilli's Full Chi-Square and the Mantel-Haenszel Chi-Square contain this feature and include analysis of subgroup correct and incorrect responses at fixed or specified score-levels. Thus, the assumption underlying both of these procedures is that the overall test-score is valid, since it is used as an estimate of ability. These procedures also assume that the test as a whole is reliable and univocal.

There were two purposes for the current study of DIF in the ASVAB. The first purpose was to examine the ASVAB Forms 15, 16, and 17 to determine the nature and extent of DIF on those forms. Second, the study compared the effect of sample size on the magnitude of the five indices for ASVAB Forms 15, 16, and 17 power subtests.

Five indices were chosen as analytic measures of DIF. Three indices based on traditional item-analytic procedures and conditional relationships with the item-total test score: Camilli's Full Chi-Square (FCHI), the Mantel-Haenszel Chi-Square (MHCHI), and the Mantel-Haenszel Odds Ratio (MHODDS) and its transformed values to the Educational Testing Service Delta difference. The remaining two indices are based on IRT statistics: the Lord's Chi-Square (LCHI) and the Modified Sum of Squares (MSOS).

## II. METHOD

### Subjects

The data for this study come from the Initial Operational Test and Evaluation (IOT & E) of ASVAB Forms 15, 16, and 17. These forms of the ASVAB were administered nationally to a sample of 99,657 applicants to the Armed Forces between November 1987 and January 1988. These data were edited by the Air Force Human Resources Laboratory using procedures described elsewhere (Ree, Welsh, Earles, & Curran, in press). After initial editing 98,259 cases remained. From this data set, additional cases were culled because of a printing error identified for one item in Form 15b. This error was not corrected until several days after the beginning of the IOT&E study; consequently the test scores from the first 3 days of testing on Form 15b were deleted. The final data set contained 96,700 cases.

Table 1 shows the distributions and percentages of cases by each of seven ASVAB Forms (15a, 15b, 15c, 16a, 16b, 17a, 17b) for gender and ethnic groups. Form 15c was the redesignated anchor or reference test, and was identical to Form 8a. The lower number of cases for Form 15b evident in Table 1 was the result of the selective editing for the printing error. Despite the selective editing, the overall percentages by groups by form remains extremely close to the percentages obtained in the pre-editing administration. The lowest number of total cases was approximately 13,000 for Forms 15a and 17b, the largest was approximately 15,000 for Form 15a. Ethnic and gender groups were formed on the basis of self-report on the standard, operational ASVAB answer sheet.

### Measures

The ASVAB is a multiple-aptitude, group-administered, paper and pencil test battery given to applicants for the U.S. Armed Services to determine aptitude qualifications. The ASVAB is used both to select and to classify qualified applicants. The battery is administered throughout the continental United States and overseas at Military Enlistment Processing Stations and their associated satellite testing sites. The operational forms of the ASVAB are periodically replaced in order to minimize exposure, reduce compromise, and update test items. The six operational forms of the ASVAB are replaced about every 4 years.

Table 1. Distribution and Percentage of Cases by ASVAB Form:  
IOT&E Data by Gender and Ethnicity

|                  | Form Number    |                |                |                |                |                |                |        |
|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------|
|                  | 15a            | 15b            | 15c(8a)        | 16a            | 16b            | 17a            | 17b            | Total  |
| <u>Gender</u>    |                |                |                |                |                |                |                |        |
| Males            | 12,536<br>(84) | 10,960<br>(84) | 11,957<br>(84) | 11,934<br>(84) | 11,609<br>(84) | 11,425<br>(84) | 10,950<br>(84) | 81,376 |
| Females          | 2,397<br>(63)  | 2,034<br>(16)  | 2,221<br>(16)  | 2,331<br>(16)  | 2,186<br>(16)  | 2,123<br>(16)  | 2,032<br>(16)  | 15,324 |
| Total*           | 14,933         | 12,994         | 14,178         | 14,265         | 13,795         | 13,548         | 12,982         | 96,700 |
| <u>Ethnicity</u> |                |                |                |                |                |                |                |        |
| White            | 9,427<br>(63)  | 8,107<br>(62)  | 8,982<br>(63)  | 8,936<br>(63)  | 8,618<br>(62)  | 8,395<br>(62)  | 8,082<br>(62)  | 60,547 |
| Black            | 3,770<br>(25)  | 3,285<br>(25)  | 3,589<br>(25)  | 3,705<br>(26)  | 3,542<br>(26)  | 3,535<br>(26)  | 3,381<br>(26)  | 24,807 |
| Hispanic         | 1,191<br>(8)   | 1,134<br>(9)   | 1,095<br>(8)   | 1,100<br>(8)   | 1,106<br>(8)   | 1,115<br>(8)   | 1,012<br>(8)   | 7,753  |
| Total*           | 14,388         | 12,526         | 13,666         | 13,741         | 13,266         | 13,045         | 12,475         | 93,107 |

\*Percentages do not add to 100% because other identified ethnic groups that also took ASVAB Forms 15, 16, and 17 were not included.

The ASVAB has 10 tests; eight are power tests of cognitive ability and two are speeded tests. A set of six ASVABs is divided into three numerically designated forms (i.e., Form 15, Form 16, and Form 17) and for each form, two versions are designated "a" or "b" (i.e., version 15a, 15b, 16a, 16b, 17a, and 17b). For ASVAB Forms 15, 16, and 17, there are four subtests that are unique to each version. These subtests are Word Knowledge (WK), Arithmetic Reasoning (AR), Paragraph Comprehension (PC), and Numerical Operations (NO--a speeded subtest). These subtests comprised the Armed Forces Qualification Test (AFQT) prior to January 1989. These four unique subtests contain no items in common with any of the other forms or versions and are referred to as the "head" of a version of the ASVAB. The other six tests form what is referred to as the "tail" of the battery and contain

scrambled order, identical to those in its sister version. Within a form, versions "a" and "b" have six subtests in common--one speeded subtest (Coding Speed, CS) and five power tests (General Science, GS; Auto & Shop Information, AS; Mechanical Comprehension, MC; Mathematics Knowledge, MK; and Electronics Information, EI). Table 2 provides a description of the ASVAB subtest content, length and time limits, as well as the subtests' commonly used abbreviations.

Table 2. Content of ASVAB Forms 8 Through 17

| Subtest<br>(ASVAB order)         | Description   | Number<br>of items | Test<br>time<br>(mins) |
|----------------------------------|---|--------------------|------------------------|
| General<br>Science (GS)          | Knowledge of the physical and biological sciences   | 25                 | 11                     |
| Arithmetic<br>Reasoning (AR)     | Word problems emphasizing mathematical reasoning rather than mathematical knowledge                             | 30                 | 36                     |
| Word<br>Knowledge (WK)           | Understanding the meaning of words, i.e. vocabulary   | 35                 | 11                     |
| Paragraph<br>Comprehension (PC)  | Presentation of short paragraphs followed by one or more multiple choice items                                  | 15                 | 13                     |
| Numerical<br>Operations (NO)     | A speeded test of four arithmetic operations, i.e. addition, subtraction, multiplication and division           | 50                 | 3                      |
| Coding Speed (CS)                | A speeded test of matching words and four digit numbers   | 84                 | 7                      |
| Auto & Shop<br>Information (AS)  | Knowledge of auto mechanics, shop practices and tool functions in verbal and pictorial items                    | 25                 | 11                     |
| Mathematics<br>Knowledge (MK)    | Knowledge of algebra, geometry, and fractions   | 25                 | 24                     |
| Mechanical<br>Comprehension (MC) | Understanding mechanical principles such as gears, levers, pulleys and hydraulics in verbal and pictorial items | 25                 | 19                     |
| Electronics<br>Information (EI)  | Knowledge of electronics and radio principles in verbal and pictorial items                                     | 20                 | 9                      |
| Total                            |   | 334                | 144                    |

This study of DIF for ASVAB Forms 15, 16, and 17 was restricted to an examination of only the items on the eight power subtests of the ASVAB -- a total of 200 items per form. Of these 200 items, 80 items per form are unique. The remaining 120 power-test items are common between sister versions. For the purposes of this study, each of the 200 power subtest items on a given form was analyzed separately with each of the five DIF indices mentioned.

### Analytic Procedure

#### Description of DIF Indices

There were five DIF indices identified from previous research that were used to investigate whether items on the eight power subtests of ASVAB Forms 15, 16, or 17 function differentially for gender or ethnic groups after controlling for ability. Three of these, as discussed above, are based on traditional item-analytic approaches, and have been shown to be fairly consistent in indicating DIF (Linn et al., 1988). Two other indices based on IRT statistics were also used in this study. Values of each of the five indices for each power subtest item were computed for each of four randomly drawn samples (described below) of different size.

The Mantel-Haenszel Chi-Square (MHCHI). This Chi-Square-like index was proposed by Holland and Thayer (1986). It is similar to the Camilli's Full Chi-Square as it is based on traditional right-wrong scoring and uses a  $2 \times 2$  contingency table that breaks the right-wrong frequency for a given item by focal or reference group. The difference between this procedure and the computation of the Camilli's Full Chi-Square is that the Mantel-Haenszel Chi-Square statistic is computed at each observed total score level and summed across observed score levels. The Camilli's Full Chi-Square is computed at a priori score levels. Thus the Mantel-Haenszel Chi-Square is based on differences between the observed frequency of right-wrong answers and the expected frequency of those responses for individuals in either the focal or reference group that obtained a given total score on the test. The Mantel-Haenszel Chi-Square has one degree of freedom. Figure 1 illustrates the computational definition of the Mantel-Haenszel Chi-Square based on the  $2 \times 2$  contingency table.

| Score on the $i^{\text{th}}$ item |          |          |          |
|-----------------------------------|----------|----------|----------|
|                                   | 1        | 0        | Total    |
| Reference                         | $A_j$    | $B_j$    | $N_{rj}$ |
| Focal                             | $C_j$    | $D_j$    | $N_{fj}$ |
| Total                             | $M_{lj}$ | $M_{oj}$ | $T_j$    |

Figure 1. Mantel-Haenszel 2 X 2 Contingency Table.

Mantel-Haenszel

$$\chi^2 = \frac{\{\sum A_j - E(A_j) - .5\}^2}{\sum \text{var}(A_j)} \quad (1)$$

Where:

$$E(A_j) = \frac{N_{rj} M_{lj}}{T_j}$$

and

$$\text{var}(A_j) = \frac{N_{rj} N_{fj} M_{lj} M_{oj}}{(T_j)^2(T_j-1)}$$

The Mantel-Haenszel Odds Ratio (MHODDS). The Mantel-Haenszel Odds Ratio is defined by the following equation, again based on the contingency table shown in Figure 1:

$$\text{Mantel-Haenszel Odds Ratio} = \frac{\sum A_j D_j / T_j}{\sum B_j C_j / T_j} \quad (2)$$

The Mantel-Haenszel Odds Ratio can range from zero to infinity. A value of 1.0 indicates identical functioning in focal and reference groups. Mantel-Haenszel Odds Ratio values less than one indicate that the item was relatively easier for the focal group, and values greater than one indicate the opposite -- the item was easier for the reference group. The Mantel-Haenszel Odds Ratio was transformed to a Delta difference score by the transformation shown in equation formula (3) in order to determine the extent of practical (as opposed to statistical) significance:

$$\text{Delta difference} = (-2.35) \ln(\text{MHODDS}) \quad (3)$$

Values of MHODDS greater than 1.5304 and less than .6534 correspond to a Delta difference of 1, indicating a practical difference in item functioning between reference and focal groups.

Camilli's Full Chi-Square (FCHI). This Chi-Square procedure first proposed by Camilli (1979) was used to examine the data using five score intervals. The Chi-Square values that resulted from the observed and expected frequencies of right-wrong responses for the focal and the reference groups were summed across five total raw-score intervals or score groups. No attempt was made to alter the number of score groups in order to obtain minimum recommended expected frequencies in each of the score groups. The recommendation of Ironson (1982) was followed in establishing the minimum expected frequencies at five cases in each of the score groups for focal and reference groups. If the minimum number of five expected cases was not available in the random samples drawn from the total data set, the value of the full Chi-Square was not computed for that item.

The Modified Sum of Squares (MSOS). This DIF index is based on an adaptation of an IRT-based index first proposed by Linn et al. (1981) who used *a priori* levels of ability to calculate sum of the squared distances (deviations) between two item characteristic curves (ICCs). The deviations encompassed the ICC of an item for the reference and one for the focal group. Shepard et al. (1984) have suggested a modification to the original sum of squared distances index proposed by Linn et al. (1981). Their modification termed the modified sum of squares, calculates the distances between the ICC's at each observed (as opposed to *a priori*) theta value in the sample.

Lord's Chi-Square (LCHI). This Chi-Square statistic is based on the IRT three-parameter logistic model and provides a simultaneous test for the between-group differences in a and b parameters. First, a, b, and c parameter estimates were obtained for the total group using LOGIST5 (Wingersky, Barton, & Lord, 1982). The purpose of the first LOGIST run was to obtain c-parameter estimates that provide the fixed c's in subsequent LOGIST runs. The a and b parameters were then estimated separately for each group (the focal group or the reference group) using the c's from the initial run with the combined (focal and reference group) data.

The a and b parameter estimates in the focal group were then equated to have the same mean and variance as those of the reference group. This was accomplished using the procedure recommended by Linn, Levine, Hastings, and Wardrop (1980) and Shepard et al. (1984). Two scaling constants, A and B, were computed such that the means and variances of the focal group were equal to the means and variances of the reference group. The Lord's Chi-Square significance test was then computed to test the significance of any differences between the a's and b's for the focal and reference groups.

After calculation of all five indices of DIF, distributional statistics of the indices for all possible pairwise comparisons for the five groups were examined. Pearson Product-Moment correlations of each of the DIF indices with each of the other indices were calculated to obtain a measure of their similarity. The next stage of the analysis involved examination of the obtained values of the five indices for the four comparison groups across four levels of sample size (two sample sizes for the IRT indices) in order to compare the effect of sample size on the indices.

### Effects of Sample Size

To examine the effects of sample size on the five DIF indices, random samples of four sizes were drawn from the data ( $N = 96,700$ ). Random sample sizes of 100, 500, 1,000, and 2,000 were drawn for the traditional indices and five DIF indices for each power item in all of the seven forms were calculated for each of four comparison groups. Only two random sample sizes of 1,000 and 2,000 were drawn for the IRT-based Indices. Sample sizes less than 1,000 would have produced unstable IRT parameter estimates. Additional samples of 100, 500, 1,000, and 2,000 Whites were drawn in order to establish a baseline comparison group for each of the four sample sizes for the traditional indices. This baseline was used to establish the number of items expected to be detected by chance for each of the five indices, for each power item, on all seven forms of the ASVAB. The use of a baseline comparison group has been used most often for indices without a test of statistical significance in order to compare the magnitude of results. The baseline was used in this study to compare the magnitude and consistency of all five indices.

## III. RESULTS

### Descriptive Statistics

Total sample raw score descriptive statistics and KR-20 reliability estimates are shown in Table 3 by ASVAB Form number and subtest. The total sample of cases appears reasonably distributed across forms, and examination of the raw subtest means indicates that systematic sampling bias probably did not exist in the ASVAB IOT&E.

The raw subtest score descriptive statistics for the gender and ethnic groups are shown in Appendix A. These statistics include the KR-20 reliability estimates for the total sample of males and females, as well as Whites, Blacks, and Hispanics. Inspection of the KR-20 reliability estimates reveals that the values for reference group Whites and males are higher than Hispanics and Blacks and females, but not appreciably so. The same raw-score descriptive statistics for the random groups are included in Appendix B.

The raw score descriptive statistics for the subtests of all seven forms of the ASVAB by gender and ethnic groups for each of the randomly drawn samples in Appendix B indicate that the four random samples are reasonable subsamples of the parent sample from which they were drawn. None of the random subsamples appear to show anything more than sampling variance for the descriptive statistics computed.

**Table 3. Descriptive Statistics of Subtest Raw Score Data for Total Sample by Form**

| Subtest         | Mean   | Standard Deviation | Median | Skew   | Kurtosis | Min | Max | KR-20   | N     |
|-----------------|--------|--------------------|--------|--------|----------|-----|-----|---------|-------|
| <u>Form 15a</u> |        |                    |        |        |          |     |     |         |       |
| GS              | 16.101 | 4.481              | 16.109 | -0.103 | -0.697   | 2   | 25  | 0.79068 | 14933 |
| AR              | 17.984 | 6.243              | 17.464 | +0.133 | -0.883   | 2   | 30  | 0.86596 | 14933 |
| WK              | 25.832 | 6.646              | 27.126 | -0.730 | -0.178   | 2   | 35  | 0.89175 | 14933 |
| PC              | 11.926 | 2.719              | 12.632 | -1.074 | +0.733   | 0   | 15  | 0.74507 | 14933 |
| AS              | 14.718 | 5.234              | 14.598 | +0.012 | -0.941   | 0   | 25  | 0.83353 | 14933 |
| MK              | 13.785 | 5.504              | 13.119 | +0.253 | -0.869   | 0   | 25  | 0.85028 | 14933 |
| MC              | 15.336 | 4.774              | 15.456 | -0.160 | -0.659   | 0   | 25  | 0.79350 | 14933 |
| EI              | 11.550 | 3.568              | 11.328 | +0.170 | -0.465   | 0   | 20  | 0.70600 | 14933 |
| <u>Form 15b</u> |        |                    |        |        |          |     |     |         |       |
| GS              | 16.166 | 4.538              | 16.173 | -0.126 | -0.673   | 0   | 25  | 0.79588 | 12994 |
| AR              | 18.082 | 6.294              | 17.759 | +0.076 | -0.966   | 0   | 30  | 0.87245 | 12994 |
| WK              | 25.956 | 6.083              | 26.769 | -0.561 | -0.328   | 5   | 35  | 0.87054 | 12994 |
| PC              | 11.799 | 2.775              | 12.481 | -1.024 | +0.587   | 0   | 15  | 0.75187 | 12994 |
| AS              | 14.522 | 5.234              | 14.419 | +0.035 | -0.919   | 0   | 25  | 0.83156 | 12994 |
| MK              | 13.618 | 5.537              | 12.976 | +0.260 | -0.871   | 0   | 25  | 0.85197 | 12994 |
| MC              | 15.243 | 4.768              | 15.407 | -0.152 | -0.671   | 0   | 25  | 0.79182 | 12994 |
| EI              | 11.594 | 3.609              | 11.383 | +0.150 | -0.502   | 0   | 20  | 0.71383 | 12994 |
| <u>Form 15c</u> |        |                    |        |        |          |     |     |         |       |
| GS              | 15.815 | 4.448              | 15.810 | -0.057 | -0.589   | 0   | 25  | 0.78443 | 14178 |
| AR              | 17.547 | 6.432              | 17.056 | +0.164 | -0.907   | 2   | 30  | 0.87564 | 14178 |
| WK              | 26.474 | 5.865              | 27.296 | -0.717 | +0.107   | 0   | 35  | 0.86635 | 14178 |
| PC              | 11.106 | 2.740              | 11.633 | -0.837 | +0.294   | 0   | 15  | 0.69085 | 14178 |
| AS              | 14.921 | 5.121              | 14.840 | -0.013 | -0.391   | 0   | 25  | 0.82300 | 14178 |
| MK              | 13.465 | 5.620              | 12.600 | +0.310 | -0.883   | 0   | 25  | 0.85799 | 14178 |
| MC              | 14.743 | 5.058              | 14.641 | +0.014 | -0.900   | 0   | 25  | 0.81423 | 14178 |
| EI              | 11.536 | 3.811              | 11.581 | -0.083 | -0.634   | 0   | 20  | 0.74684 | 14178 |
| <u>Form 16a</u> |        |                    |        |        |          |     |     |         |       |
| GS              | 15.925 | 4.776              | 16.076 | -0.154 | -0.748   | 2   | 25  | 0.82019 | 14265 |
| AR              | 18.143 | 6.001              | 18.032 | +0.035 | -0.758   | 1   | 30  | 0.85453 | 14265 |
| WK              | 26.176 | 5.963              | 27.150 | -0.650 | -0.165   | 2   | 35  | 0.87034 | 14265 |
| PC              | 11.885 | 2.881              | 12.666 | -1.113 | +0.769   | 0   | 15  | 0.77389 | 14265 |
| AS              | 14.228 | 5.962              | 14.116 | -0.004 | -1.068   | 0   | 25  | 0.87343 | 14265 |
| MK              | 13.555 | 5.687              | 12.635 | +0.339 | -0.896   | 0   | 25  | 0.85893 | 14265 |
| MC              | 15.554 | 4.730              | 15.768 | -0.206 | -0.674   | 0   | 25  | 0.78540 | 14265 |
| EI              | 11.955 | 3.911              | 11.896 | -0.021 | -0.622   | 0   | 20  | 0.75650 | 14265 |

Table 3. (Concluded)

| Subtest         | Standard |           |        |        |          | Min | Max | KR-20   | N     |
|-----------------|----------|-----------|--------|--------|----------|-----|-----|---------|-------|
|                 | Mean     | Deviation | Median | Skew   | Kurtosis |     |     |         |       |
| <u>Form 16b</u> |          |           |        |        |          |     |     |         |       |
| GS              | 15.965   | 4.802     | 16.144 | -0.168 | -0.739   | 2   | 25  | 0.82297 | 13795 |
| AR              | 17.945   | 6.447     | 17.606 | +0.094 | -0.943   | 0   | 30  | 0.87654 | 13795 |
| WK              | 26.469   | 5.777     | 27.136 | -0.631 | +0.004   | 2   | 35  | 0.86895 | 13795 |
| PC              | 11.667   | 2.708     | 12.169 | -0.862 | +0.329   | 0   | 15  | 0.72144 | 13795 |
| AS              | 14.267   | 5.949     | 14.142 | -0.007 | -1.051   | 0   | 25  | 0.87330 | 13795 |
| MK              | 13.627   | 5.694     | 12.799 | +0.311 | -0.918   | 0   | 25  | 0.85980 | 13795 |
| MC              | 15.543   | 4.709     | 15.788 | -0.204 | -0.713   | 0   | 25  | 0.78345 | 13795 |
| EI              | 12.010   | 3.955     | 11.984 | -0.039 | -0.657   | 0   | 20  | 0.76326 | 13795 |
| <u>Form 17a</u> |          |           |        |        |          |     |     |         |       |
| GS              | 15.904   | 4.551     | 16.082 | -0.201 | -0.595   | 1   | 25  | 0.79004 | 13548 |
| AR              | 17.866   | 6.633     | 17.567 | +0.074 | -0.967   | 2   | 30  | 0.88344 | 13548 |
| WK              | 26.091   | 6.473     | 26.977 | -0.621 | -0.245   | 1   | 35  | 0.88809 | 13548 |
| PC              | 11.696   | 2.829     | 12.368 | -0.996 | +0.533   | 0   | 15  | 0.74926 | 13548 |
| AS              | 14.944   | 5.478     | 14.614 | +0.051 | -0.959   | 0   | 25  | 0.85051 | 13548 |
| MK              | 13.861   | 5.351     | 13.136 | +0.297 | -0.762   | 0   | 25  | 0.84454 | 13548 |
| MC              | 15.540   | 4.518     | 15.652 | -0.161 | -0.551   | 0   | 25  | 0.77365 | 13548 |
| EI              | 11.844   | 3.961     | 11.702 | +0.044 | -0.668   | 0   | 20  | 0.76833 | 13548 |
| <u>Form 17b</u> |          |           |        |        |          |     |     |         |       |
| GS              | 15.925   | 4.568     | 16.099 | -0.196 | -0.621   | 0   | 25  | 0.79207 | 12987 |
| AR              | 17.718   | 6.360     | 17.667 | +0.020 | -0.905   | 1   | 30  | 0.87299 | 12987 |
| WK              | 26.289   | 6.199     | 27.324 | -0.622 | -0.286   | 2   | 35  | 0.88149 | 12987 |
| PC              | 11.655   | 2.622     | 12.145 | -0.914 | +0.574   | 0   | 15  | 0.71882 | 12987 |
| AS              | 14.837   | 5.489     | 14.555 | +0.069 | -0.965   | 0   | 25  | 0.84910 | 12987 |
| MK              | 13.650   | 5.316     | 12.961 | +0.289 | -0.744   | 0   | 25  | 0.84034 | 12987 |
| MC              | 15.566   | 4.481     | 15.661 | -0.159 | -0.522   | 0   | 25  | 0.76980 | 12987 |
| EI              | 11.641   | 3.972     | 11.415 | +0.096 | -0.563   | 0   | 20  | 0.76810 | 12987 |

The subtest intercorrelations for the total sample for ASVAB 15c (8a) are shown in the upper diagonal of Table 4, while the same subtest intercorrelations for the Profile of American Youth sample on ASVAB 8a are displayed in the lower diagonal. Tables 5, 6, and 7 contain the same arrangement of intercorrelations for ASVAB 15c and the Profile of American Youth sample subtest intercorrelations for the total gender and ethnic groups.

**Table 4.** ASVAB Power Subtest Intercorrelations for Total Sample on Forms 15c (8a) (Upper Triangle)<sup>a</sup> and For Profile of American Youth Sample (Lower Triangle)<sup>b</sup>

| ASVAB Power Subtests |      |      |      |      |      |      |      |      |
|----------------------|------|------|------|------|------|------|------|------|
|                      | GS   | AR   | WK   | PC   | AS   | MK   | MC   | EI   |
| GS                   | 1.00 | .63  | .74  | .60  | .61  | .54  | .66  | .71  |
| AR                   | .72  | 1.00 | .60  | .59  | .48  | .74  | .62  | .56  |
| WK                   | .80  | .71  | 1.00 | .69  | .51  | .52  | .56  | .64  |
| PC                   | .69  | .67  | .80  | 1.00 | .41  | .53  | .49  | .51  |
| AS                   | .64  | .53  | .52  | .42  | 1.00 | .28  | .69  | .68  |
| MK                   | .69  | .83  | .67  | .64  | .41  | 1.00 | .49  | .44  |
| MC                   | .70  | .68  | .59  | .52  | .74  | .60  | 1.00 | .68  |
| EI                   | .76  | .66  | .68  | .57  | .75  | .58  | .74  | 1.00 |

<sup>a</sup>Based on total N = 14,178.

<sup>b</sup>Based on total N = 9,173 weighted to be representative of the American youth population, ages 18-23.

**Table 5.** ASVAB Power Subtest Intercorrelations for Total Sample Males on Forms 15c (8a) (Lower Triangle)<sup>a</sup> and Females (Upper Triangle)<sup>b</sup>

| ASVAB Power Subtests |      |      |      |      |      |      |      |      |
|----------------------|------|------|------|------|------|------|------|------|
|                      | GS   | AR   | WK   | PC   | AS   | MK   | MC   | EI   |
| GS                   | 1.00 | .58  | .70  | .55  | .57  | .50  | .57  | .60  |
| AR                   | .63  | 1.00 | .56  | .54  | .45  | .68  | .56  | .50  |
| WK                   | .76  | .61  | 1.00 | .67  | .53  | .49  | .52  | .60  |
| PC                   | .62  | .61  | .70  | 1.00 | .40  | .48  | .43  | .47  |
| AS                   | .60  | .48  | .54  | .46  | 1.00 | .30  | .53  | .54  |
| MK                   | .56  | .76  | .53  | .54  | .31  | 1.00 | .48  | .42  |
| MC                   | .66  | .62  | .58  | .53  | .67  | .52  | 1.00 | .52  |
| EI                   | .72  | .57  | .67  | .56  | .66  | .47  | .67  | 1.00 |

<sup>a</sup>Based on total sample males N = 11,957.

<sup>b</sup>Based on total sample females N = 2,221.

**Table 6.** ASVAB Power Subtest Intercorrelations on Forms 15c (8a) for Total Whites (Lower Triangle)<sup>a</sup> and Total Blacks (Upper Triangle)<sup>b</sup>

| ASVAB Power Subtests |      |      |      |      |      |      |      |      |
|----------------------|------|------|------|------|------|------|------|------|
|                      | GS   | AR   | WK   | PC   | AS   | MK   | MC   | EI   |
| GS                   | 1.00 | .46  | .66  | .50  | .43  | .43  | .48  | .57  |
| AR                   | .60  | 1.00 | .46  | .50  | .28  | .65  | .42  | .37  |
| WK                   | .71  | .58  | 1.00 | .64  | .38  | .43  | .39  | .53  |
| PC                   | .54  | .57  | .66  | 1.00 | .27  | .47  | .32  | .40  |
| AS                   | .51  | .38  | .40  | .30  | 1.00 | .16  | .49  | .52  |
| MK                   | .53  | .75  | .52  | .52  | .20  | 1.00 | .33  | .30  |
| MC                   | .60  | .57  | .50  | .44  | .62  | .47  | 1.00 | .50  |
| EI                   | .67  | .51  | .59  | .45  | .62  | .41  | .63  | 1.00 |

<sup>a</sup>Based on total sample Whites N = 8,982.

<sup>b</sup>Based on total sample Blacks N = 3,589.

**Table 7.** ASVAB Power Subtest Intercorrelations on Forms 15c (8a) for Total Whites (Lower Triangle)<sup>a</sup> and Total Hispanics (Upper Triangle)<sup>b</sup>

| ASVAB Power Subtests |      |      |      |      |      |      |      |      |
|----------------------|------|------|------|------|------|------|------|------|
|                      | GS   | AR   | WK   | PC   | AS   | MK   | MC   | EI   |
| GS                   | 1.00 | .50  | .68  | .57  | .55  | .44  | .57  | .61  |
| AR                   | .60  | 1.00 | .48  | .52  | .35  | .69  | .48  | .43  |
| WK                   | .71  | .58  | 1.00 | .65  | .47  | .43  | .47  | .54  |
| PC                   | .54  | .57  | .66  | 1.00 | .39  | .48  | .43  | .45  |
| AS                   | .51  | .38  | .40  | .30  | 1.00 | .20  | .61  | .58  |
| MK                   | .53  | .75  | .52  | .52  | .20  | 1.00 | .43  | .38  |
| MC                   | .60  | .57  | .50  | .44  | .62  | .47  | 1.00 | .60  |
| EI                   | .67  | .51  | .59  | .45  | .62  | .41  | .63  | 1.00 |

<sup>a</sup>Based on total sample Whites N = 8,982.

<sup>b</sup>Based on total sample Hispanics N = 1,095.

The pattern of intercorrelations among the power subtests showed no surprises. The order of magnitude of the intercorrelations, as well as the pattern of the relationships among the subtests, is about the same, and shows a similar pattern in relation to the Profile of American Youth data. There are some exceptions. The correlations among MK and MC and EI are somewhat lower in the sample of applicants used in this study and those subjects in the Youth Aptitude Profile study.

The pattern of intercorrelations between the reference groups in this study (Whites and males) and the focal groups indicated some differences between the focal and reference groups. The male intercorrelations are higher than those of the total female sample. The White intercorrelations are higher and more variable than those of the Blacks and Hispanics, as would be generally expected given the subgroup means and standard deviations shown in the total subgroup descriptive statistics in Appendix A.

#### Differential Item Functioning

Table 8 shows the means and standard deviations of the five DIF indices for each of the four comparison groups (White-White, White-Black, White-Hispanic, and Male-Female) for ASVAB Form 15a. The means and standard deviations of the indices for the other forms are listed in Appendix C. These descriptive statistics of the five indices are shown for each of the four sample sizes.

Table 8 indicates that the indices are quite variable across sample size and comparison groups. The means and standard deviations of the indices are quite small in the White-White baseline group, relative to the corresponding values in any of the three comparison groups. There are values missing for the two IRT-based indices for PC subtest on Form 15a. The LOGIST5 program could not estimate the a and b parameters for this short (15 item) subtest in the 2,000 case random sample since a large number of subjects in that sample obtained a maximum score on the subtest. For that sample and that subtest, the LCHI and MSOS could not be calculated since both indices require the a and b parameter estimates. Some of the values for the FCHI (FCHI = FCHI5 for five score intervals) also could not be calculated. This was due to a failure to obtain the minimum expected frequency of either correct or incorrect response of five cases for either the focal or reference group (Ironson, 1982) in the

**Table 8. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 15a**

| Subtest/<br>Index | Random Sample Size    |          |         |          |       |         |       |         |  |  |  |  |  |
|-------------------|-----------------------|----------|---------|----------|-------|---------|-------|---------|--|--|--|--|--|
|                   | N=2,000               |          | N=1,000 |          | N=500 |         | N=100 |         |  |  |  |  |  |
|                   | <u>White vs White</u> |          |         |          |       |         |       |         |  |  |  |  |  |
| <b>GS</b>         |                       |          |         |          |       |         |       |         |  |  |  |  |  |
| FCH15             | 3.529                 | (1.878)  | 4.299   | (2.465)  | 5.045 | (3.474) | 3.540 | (1.759) |  |  |  |  |  |
| MHCHI             | .639                  | (1.096)  | .408    | (.493)   | .570  | (.768)  | .504  | (.816)  |  |  |  |  |  |
| MHOODS            | 1.000                 | (.067)   | 1.023   | (.108)   | .993  | (.175)  | 1.180 | (.507)  |  |  |  |  |  |
| LCHI              | 4.646                 | (4.787)  | 3.193   | (2.789)  |       |         |       |         |  |  |  |  |  |
| MSOS              | 4.011                 | (6.251)  | 9.073   | (9.993)  |       |         |       |         |  |  |  |  |  |
| <b>AR</b>         |                       |          |         |          |       |         |       |         |  |  |  |  |  |
| FCH15             | 3.904                 | (2.625)  | 3.455   | (2.534)  | 4.967 | (3.155) | 5.708 | (3.205) |  |  |  |  |  |
| MHCHI             | .610                  | (1.132)  | .593    | (.855)   | .898  | (.982)  | .922  | (1.034) |  |  |  |  |  |
| MHOODS            | .999                  | (.068)   | 1.016   | (.106)   | 1.036 | (.196)  | 1.079 | (.568)  |  |  |  |  |  |
| LCHI              | 2.057                 | (1.623)  | 2.569   | (2.966)  |       |         |       |         |  |  |  |  |  |
| MSOS              | 3.412                 | (3.283)  | 8.439   | (8.968)  |       |         |       |         |  |  |  |  |  |
| <b>WK</b>         |                       |          |         |          |       |         |       |         |  |  |  |  |  |
| FCH15             | 4.342                 | (2.528)  | 4.418   | (2.757)  | 4.560 | (2.702) | 5.433 | (3.801) |  |  |  |  |  |
| MHCHI             | .683                  | (.653)   | .445    | (.513)   | .741  | (1.747) | .969  | (1.292) |  |  |  |  |  |
| MHOODS            | 1.024                 | (.115)   | 1.013   | (.144)   | 1.027 | (.226)  | 1.355 | (1.526) |  |  |  |  |  |
| LCHI              | 3.001                 | (2.691)  | 1.635   | (1.518)  |       |         |       |         |  |  |  |  |  |
| MSOS              | 3.601                 | (4.107)  | 53.282  | (34.072) |       |         |       |         |  |  |  |  |  |
| <b>PC</b>         |                       |          |         |          |       |         |       |         |  |  |  |  |  |
| FCH15             | 3.604                 | (2.124)  | 4.358   | (2.522)  | 5.299 | (2.605) | *     | (*)     |  |  |  |  |  |
| MHCHI             | .544                  | (.781)   | 1.033   | (1.419)  | .976  | (1.680) | .266  | (.280)  |  |  |  |  |  |
| MHOODS            | 1.013                 | (.101)   | 1.018   | (.191)   | 1.054 | (.257)  | 1.010 | (.417)  |  |  |  |  |  |
| LCHI              | **                    | (**)     | 11.910  | (10.021) |       |         |       |         |  |  |  |  |  |
| MSOS              | **                    | (**)     | 22.239  | (21.678) |       |         |       |         |  |  |  |  |  |
| <b>AS</b>         |                       |          |         |          |       |         |       |         |  |  |  |  |  |
| FCH15             | 4.506                 | (2.524)  | 3.777   | (2.675)  | 5.629 | (3.584) | 6.925 | (4.073) |  |  |  |  |  |
| MHCHI             | .779                  | (.961)   | .843    | (.839)   | .772  | (1.308) | .949  | (1.301) |  |  |  |  |  |
| MHOODS            | 1.010                 | (.080)   | 1.004   | (.121)   | 1.013 | (.168)  | 1.126 | (.461)  |  |  |  |  |  |
| LCHI              | 10.235                | (10.143) | 8.420   | (13.047) |       |         |       |         |  |  |  |  |  |
| MSOS              | 7.904                 | (7.613)  | 9.142   | (6.488)  |       |         |       |         |  |  |  |  |  |
| <b>MK</b>         |                       |          |         |          |       |         |       |         |  |  |  |  |  |
| FCH15             | 3.608                 | (2.038)  | 4.237   | (3.356)  | 4.353 | (2.152) | 4.939 | (2.210) |  |  |  |  |  |
| MHCHI             | .696                  | (1.032)  | .918    | (1.382)  | .414  | (.558)  | 1.056 | (1.828) |  |  |  |  |  |
| MHOODS            | 1.003                 | (.070)   | 1.005   | (.118)   | 1.004 | (.114)  | 1.350 | (1.630) |  |  |  |  |  |
| LCHI              | 1.468                 | (1.561)  | 1.923   | (2.915)  |       |         |       |         |  |  |  |  |  |
| MSOS              | 2.556                 | (2.415)  | 6.710   | (9.286)  |       |         |       |         |  |  |  |  |  |
| <b>MC</b>         |                       |          |         |          |       |         |       |         |  |  |  |  |  |
| FCH15             | 3.694                 | (2.290)  | 5.395   | (4.428)  | 4.580 | (2.415) | 4.542 | (3.243) |  |  |  |  |  |
| MHCHI             | 1.165                 | (1.640)  | 1.180   | (1.967)  | 1.067 | (1.063) | .679  | (1.191) |  |  |  |  |  |
| MHOODS            | 1.003                 | (.099)   | 1.006   | (.135)   | 1.009 | (.178)  | 1.048 | (.393)  |  |  |  |  |  |
| LCHI              | 1.982                 | (2.095)  | 3.372   | (3.524)  |       |         |       |         |  |  |  |  |  |
| MSOS              | 2.911                 | (2.876)  | 10.758  | (10.484) |       |         |       |         |  |  |  |  |  |
| <b>EI</b>         |                       |          |         |          |       |         |       |         |  |  |  |  |  |
| FCH15             | 3.837                 | (2.644)  | 3.473   | (1.632)  | 5.442 | (3.278) | 7.046 | (.694)  |  |  |  |  |  |
| MHCHI             | .582                  | (1.046)  | .498    | (.619)   | .887  | (1.552) | .795  | (.998)  |  |  |  |  |  |
| MHOODS            | 1.008                 | (.062)   | 1.001   | (.092)   | 1.020 | (.147)  | 1.068 | (.444)  |  |  |  |  |  |
| LCHI              | 2.193                 | (1.861)  | 2.304   | (1.713)  |       |         |       |         |  |  |  |  |  |
| MSOS              | 4.274                 | (5.195)  | 7.052   | (5.435)  |       |         |       |         |  |  |  |  |  |

Table 8. (Continued)

| Subtest/<br>Index     | Random Sample Size |          |         |           |        | N=500    | N=100   |
|-----------------------|--------------------|----------|---------|-----------|--------|----------|---------|
|                       | N=2,000            |          | N=1,000 |           | N=500  |          |         |
| <u>Black vs White</u> |                    |          |         |           |        |          |         |
| GS                    |                    |          |         |           |        |          |         |
| FCH15                 | 19.268             | (31.957) | 12.967  | (21.499)  | 7.799  | (10.353) | *       |
| MHC1                  | 12.311             | (22.528) | 6.893   | (16.225)  | 3.060  | (7.668)  | 1.139   |
| MHOODS                | 1.031              | (.373)   | 1.062   | (.426)    | 1.042  | (.420)   | 1.248   |
| LCHI                  | 15.679             | (19.290) | 8.117   | (14.123)  |        |          | (.740)  |
| MSOS                  | 39.755             | (66.652) | 43.104  | (89.587)  |        |          |         |
| AR                    |                    |          |         |           |        |          |         |
| FCH15                 | 14.464             | (16.443) | 8.795   | (7.646)   | 8.920  | (6.809)  | 2.725   |
| MHC1                  | 5.937              | (8.034)  | 3.453   | (5.209)   | 3.166  | (3.522)  | 1.084   |
| MHOODS                | 1.028              | (.240)   | 1.040   | (.258)    | 1.085  | (.363)   | 1.152   |
| LCHI                  | 15.014             | (13.294) | 7.545   | (9.609)   |        |          | (.675)  |
| MSOS                  | 30.744             | (24.256) | 33.319  | (39.455)  |        |          |         |
| WK                    |                    |          |         |           |        |          |         |
| FCH15                 | 31.869             | (47.651) | 17.257  | (21.254)  | 11.626 | (12.861) | 9.879   |
| MHC1                  | 21.145             | (40.747) | 10.406  | (19.358)  | 4.979  | (9.617)  | 1.527   |
| MHOODS                | 1.128              | (.575)   | 1.121   | (.526)    | 1.063  | (.531)   | 1.064   |
| LCHI                  | 26.211             | (37.819) | 15.760  | (24.981)  |        |          | (.783)  |
| MSOS                  | 58.000             | (98.927) | 330.355 | (264.027) |        |          |         |
| PC                    |                    |          |         |           |        |          |         |
| FCH15                 | 15.536             | (16.684) | 10.095  | (9.002)   | 7.982  | (6.652)  | *       |
| MHC1                  | 9.346              | (10.620) | 5.216   | (6.708)   | 3.071  | (3.271)  | .723    |
| MHOODS                | 1.024              | (.338)   | 1.022   | (.340)    | 1.016  | (.363)   | 1.120   |
| LCHI                  | 19.169             | (12.837) | 11.729  | (10.341)  |        |          | (.607)  |
| MSOS                  | 30.385             | (22.477) | 72.225  | (79.780)  |        |          |         |
| AS                    |                    |          |         |           |        |          |         |
| FCH15                 | 16.894             | (17.171) | 10.107  | (7.530)   | 8.753  | (8.286)  | *       |
| MHC1                  | 7.797              | (10.863) | 4.230   | (6.100)   | 2.080  | (2.194)  | 1.198   |
| MHOODS                | 1.056              | (.308)   | 1.043   | (.278)    | 1.058  | (.319)   | 1.291   |
| LCHI                  | 18.921             | (30.175) | 19.518  | (25.831)  |        |          | (1.161) |
| MSOS                  | 43.549             | (47.794) | 55.317  | (52.806)  |        |          |         |
| MK                    |                    |          |         |           |        |          |         |
| FCH15                 | 17.815             | (25.083) | 12.851  | (12.817)  | 8.129  | (6.407)  | 5.842   |
| MHC1                  | 12.059             | (21.803) | 6.878   | (10.266)  | 3.627  | (5.039)  | 1.814   |
| MHOODS                | 1.021              | (.322)   | 1.024   | (.308)    | 1.036  | (.344)   | 1.260   |
| LCHI                  | 18.938             | (22.997) | 12.980  | (14.723)  |        |          | (1.016) |
| MSOS                  | 42.957             | (51.124) | 55.870  | (54.940)  |        |          |         |
| MC                    |                    |          |         |           |        |          |         |
| FCH15                 | 19.134             | (25.726) | 8.894   | (8.247)   | 6.519  | (3.819)  | 4.199   |
| MHC1                  | 9.117              | (14.081) | 3.847   | (5.825)   | 2.028  | (3.021)  | .906    |
| MHOODS                | 1.035              | (.286)   | 1.027   | (.260)    | 1.035  | (.275)   | 1.072   |
| LCHI                  | 14.178             | (18.379) | 6.128   | (5.741)   |        |          | (.513)  |
| MSOS                  | 34.770             | (28.765) | 30.576  | (25.406)  |        |          |         |
| EI                    |                    |          |         |           |        |          |         |
| FCH15                 | 13.394             | (9.572)  | 9.977   | (6.396)   | 7.260  | (3.793)  | 5.177   |
| MHC1                  | 6.000              | (7.017)  | 4.882   | (5.819)   | 1.975  | (1.773)  | .581    |
| MHOODS                | 1.028              | (.214)   | 1.039   | (.260)    | 1.044  | (.274)   | 1.103   |
| LCHI                  | 16.765             | (15.450) | 13.998  | (9.591)   |        |          | (.407)  |
| MSOS                  | 23.497             | (13.382) | 40.049  | (37.460)  |        |          |         |

Table 8. (Continued)

| Subtest/<br>Index         | Random Sample Size |           |         |           |        |          |                  |
|---------------------------|--------------------|-----------|---------|-----------|--------|----------|------------------|
|                           | N=2,000            |           | N=1,000 |           | N=500  | N=100    |                  |
| <u>Hispanic vs. White</u> |                    |           |         |           |        |          |                  |
| GS                        |                    |           |         |           |        |          |                  |
| FCH15                     | 15.390             | (26.316)  | 11.509  | (16.798)  | 8.245  | (5.376)  | *                |
| MHC1I                     | 11.222             | (21.016)  | 6.510   | (12.257)  | 3.169  | (4.570)  | .733<br>(1.155)  |
| MHOODS                    | 1.065              | (.461)    | 1.112   | (.603)    | 1.091  | (.452)   | 1.307<br>(1.180) |
| LCH1                      | 10.916             | (15.436)  | 7.045   | (8.635)   |        |          |                  |
| MSOS                      | 35.192             | (62.453)  | 43.530  | (72.662)  |        |          |                  |
| AR                        |                    |           |         |           |        |          |                  |
| FCH15                     | 7.757              | (5.796)   | 6.080   | (3.600)   | 7.732  | (5.426)  | 5.960<br>(2.734) |
| MHC1I                     | 3.156              | (3.710)   | 2.012   | (2.888)   | 2.178  | (3.402)  | .891<br>(1.267)  |
| MHOODS                    | 1.013              | (.179)    | 1.021   | (.204)    | 1.071  | (.353)   | 1.080<br>(.502)  |
| LCH1                      | 6.910              | (6.364)   | 3.731   | (2.867)   |        |          |                  |
| MSOS                      | 18.262             | (16.485)  | 20.265  | (17.423)  |        |          |                  |
| WK                        |                    |           |         |           |        |          |                  |
| FCH15                     | 32.853             | (59.612)  | 17.934  | (30.147)  | 11.047 | (15.449) | *                |
| MHC1I                     | 23.237             | (50.788)  | 11.099  | (26.198)  | 4.967  | (11.533) | .937<br>(1.545)  |
| MHOODS                    | 1.328              | (1.222)   | 1.321   | (1.322)   | 1.232  | (.986)   | 1.117<br>(.843)  |
| LCH1                      | 22.347             | (31.148)  | 11.499  | (15.497)  |        |          |                  |
| MSOS                      | 80.385             | (150.272) | 68.037  | (131.369) |        |          |                  |
| PC                        |                    |           |         |           |        |          |                  |
| FCH15                     | 9.538              | (9.610)   | 7.557   | (8.781)   | 6.273  | (6.270)  | *                |
| MHC1I                     | 4.904              | (7.007)   | 4.029   | (7.204)   | 1.256  | (1.988)  | .880<br>(1.410)  |
| MHOODS                    | 1.025              | (.283)    | 1.026   | (.362)    | 1.027  | (.290)   | 1.041<br>(.562)  |
| LCH1                      | 8.999              | (6.933)   | 8.133   | (8.311)   |        |          |                  |
| MSOS                      | 22.193             | (14.934)  | 55.548  | (64.094)  |        |          |                  |
| AS                        |                    |           |         |           |        |          |                  |
| FCH15                     | 23.779             | (24.420)  | 12.751  | (14.295)  | 10.290 | (9.288)  | *                |
| MHC1I                     | 18.014             | (22.162)  | 8.705   | (11.719)  | 5.258  | (6.557)  | 1.650<br>(2.262) |
| MHOODS                    | 1.115              | (.516)    | 1.097   | (.491)    | 1.124  | (.538)   | 1.383<br>(1.102) |
| LCH1                      | 26.372             | (34.196)  | 18.903  | (27.400)  |        |          |                  |
| MSOS                      | 76.377             | (73.075)  | 72.603  | (72.802)  |        |          |                  |
| MK                        |                    |           |         |           |        |          |                  |
| FCH15                     | 8.240              | (12.951)  | 6.110   | (5.161)   | 6.434  | (4.309)  | 7.309<br>(1.443) |
| MHC1I                     | 4.007              | (9.245)   | 1.678   | (2.675)   | 1.842  | (2.226)  | 1.133<br>(2.130) |
| MHOODS                    | 1.003              | (.214)    | 1.000   | (.183)    | 1.029  | (.261)   | 1.305<br>(1.535) |
| LCH1                      | 6.516              | (9.993)   | 3.384   | (3.543)   |        |          |                  |
| MSOS                      | 16.837             | (30.055)  | 19.573  | (20.213)  |        |          |                  |
| MC                        |                    |           |         |           |        |          |                  |
| FCH15                     | 11.155             | (9.999)   | 8.474   | (6.648)   | 5.692  | (4.367)  | .878<br>(.000)   |
| MHC1I                     | 4.314              | (4.884)   | 2.371   | (3.301)   | 1.797  | (2.155)  | .481<br>(.881)   |
| MHOODS                    | 1.011              | (.201)    | 1.009   | (.210)    | 1.024  | (.257)   | 1.049<br>(.385)  |
| LCH1                      | 10.141             | (8.774)   | 6.703   | (5.593)   |        |          |                  |
| MSOS                      | 27.769             | (23.071)  | 36.263  | (31.721)  |        |          |                  |
| EI                        |                    |           |         |           |        |          |                  |
| FCH15                     | 8.718              | (5.737)   | 6.965   | (3.861)   | 6.979  | (4.043)  | 5.134<br>(.000)  |
| MHC1I                     | 3.229              | (4.092)   | 1.525   | (1.830)   | 1.475  | (1.368)  | 1.236<br>(1.879) |
| MHOODS                    | 1.021              | (.179)    | 1.018   | (.183)    | 1.038  | (.278)   | 1.169<br>(.603)  |
| LCH1                      | 15.344             | (11.216)  | 9.347   | (6.545)   |        |          |                  |
| MSOS                      | 18.927             | (15.327)  | 27.132  | (29.934)  |        |          |                  |

Table 8. (Concluded)

| Subtest/<br>Index     | Random Sample Size |           |         |           |        |          |       |         |
|-----------------------|--------------------|-----------|---------|-----------|--------|----------|-------|---------|
|                       | N=2,000            |           | N=1,000 |           | N=500  |          | N=100 |         |
| <u>Female vs Male</u> |                    |           |         |           |        |          |       |         |
| GS                    |                    |           |         |           |        |          |       |         |
| FCH15                 | 50.055             | (65.307)  | 25.226  | (29.085)  | 17.864 | (15.381) | 7.815 | (5.585) |
| MHCHI                 | 40.840             | (56.038)  | 18.240  | (25.362)  | 10.711 | (13.389) | 2.020 | (3.756) |
| MHOODS                | 1.127              | (.701)    | 1.128   | (.657)    | 1.124  | (.695)   | 1.174 | (1.015) |
| LCHI                  | 46.198             | (45.573)  | 21.904  | (24.616)  |        |          |       |         |
| MSOS                  | 108.722            | (130.760) | 100.568 | (115.988) |        |          |       |         |
| AR                    |                    |           |         |           |        |          |       |         |
| FCH15                 | 14.460             | (15.088)  | 9.252   | (5.833)   | 6.718  | (4.931)  | 5.252 | (4.100) |
| MHCHI                 | 9.035              | (13.608)  | 4.142   | (5.311)   | 2.444  | (3.508)  | .812  | (1.010) |
| MHOODS                | 1.008              | (.244)    | 1.006   | (.250)    | 1.008  | (.287)   | 1.054 | (.432)  |
| LCHI                  | 12.898             | (13.871)  | 6.725   | (5.973)   |        |          |       |         |
| MSOS                  | 24.378             | (23.975)  | 24.977  | (24.927)  |        |          |       |         |
| WK                    |                    |           |         |           |        |          |       |         |
| FCH15                 | 29.756             | (39.543)  | 19.273  | (24.527)  | 10.916 | (11.816) | 4.291 | (3.020) |
| MHCHI                 | 25.013             | (38.506)  | 14.465  | (22.961)  | 5.873  | (10.817) | 1.646 | (2.994) |
| MHOODS                | 1.094              | (.638)    | 1.111   | (.645)    | 1.100  | (.749)   | 2.126 | (6.428) |
| LCHI                  | 29.644             | (41.663)  | 23.425  | (29.815)  |        |          |       |         |
| MSOS                  | 75.078             | (88.891)  | 149.502 | (152.806) |        |          |       |         |
| PC                    |                    |           |         |           |        |          |       |         |
| FCH15                 | 23.753             | (22.084)  | 16.351  | (13.551)  | 10.724 | (9.115)  | *     | (*)     |
| MHCHI                 | 19.058             | (21.448)  | 11.699  | (13.554)  | 7.360  | (9.206)  | .756  | (.756)  |
| MHOODS                | 1.061              | (.480)    | 1.088   | (.549)    | 1.134  | (.690)   | 1.043 | (.510)  |
| LCHI                  | 22.253             | (19.655)  | 15.333  | (14.078)  |        |          |       |         |
| MSOS                  | 50.925             | (60.751)  | 71.172  | (67.874)  |        |          |       |         |
| AS                    |                    |           |         |           |        |          |       |         |
| FCH15                 | 26.890             | (21.678)  | 16.884  | (11.141)  | 9.749  | (7.994)  | 5.660 | (5.419) |
| MHCHI                 | 14.043             | (15.421)  | 6.532   | (5.964)   | 3.167  | (3.331)  | 1.192 | (2.111) |
| MHOODS                | 1.051              | (.354)    | 1.052   | (.339)    | 1.048  | (.344)   | 1.114 | (.432)  |
| LCHI                  | 41.392             | (37.009)  | 21.047  | (21.445)  |        |          |       |         |
| MSOS                  | 69.366             | (47.277)  | 139.012 | (179.548) |        |          |       |         |
| MK                    |                    |           |         |           |        |          |       |         |
| FCH15                 | 15.330             | (12.759)  | 7.939   | (4.963)   | 6.387  | (3.272)  | 5.176 | (3.398) |
| MHCHI                 | 9.054              | (11.507)  | 3.205   | (3.226)   | 2.067  | (2.218)  | 1.119 | (1.588) |
| MHOODS                | 1.006              | (.259)    | 1.003   | (.227)    | 1.008  | (.248)   | 1.059 | (.461)  |
| LCHI                  | 11.174             | (11.177)  | 6.325   | (5.242)   |        |          |       |         |
| MSOS                  | 23.248             | (24.282)  | 18.989  | (20.820)  |        |          |       |         |
| MC                    |                    |           |         |           |        |          |       |         |
| FCH15                 | 20.112             | (22.078)  | 11.613  | (10.107)  | 7.525  | (4.986)  | 4.791 | (.000)  |
| MHCHI                 | 11.221             | (16.799)  | 6.179   | (8.836)   | 3.115  | (4.703)  | 1.444 | (2.874) |
| MHOODS                | 1.044              | (.292)    | 1.048   | (.302)    | 1.049  | (.288)   | 1.114 | (.538)  |
| LCHI                  | 17.904             | (17.812)  | 7.328   | (7.755)   |        |          |       |         |
| MSOS                  | 34.249             | (31.093)  | 28.014  | (25.665)  |        |          |       |         |
| EI                    |                    |           |         |           |        |          |       |         |
| FCH15                 | 26.684             | (28.017)  | 15.470  | (15.694)  | 11.557 | (8.494)  | 6.921 | (5.708) |
| MHCHI                 | 17.074             | (22.793)  | 8.151   | (14.085)  | 4.605  | (6.367)  | 1.359 | (2.109) |
| MHOODS                | 1.049              | (.366)    | 1.050   | (.362)    | 1.076  | (.422)   | 1.093 | (.478)  |
| LCHI                  | 25.731             | (26.146)  | 13.196  | (14.846)  |        |          |       |         |
| MSOS                  | 74.171             | (68.395)  | 69.696  | (72.639)  |        |          |       |         |

Note. LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation. \*Values were not computed since Full Chi-Square was not able to establish five score intervals. \*\*Values were not computed since parameter estimates from LOGIST5 did not converge.

random samples taken from the total data set. This occurred, as one might expect, for the two smallest sizes of 500 and 100. No attempt was made to change the number of score intervals to some lower number (e.g., four), since this would alter the basis of comparison.

For the three comparison groups in Table 8, the means and standard deviations of the Camilli's Full Chi-Square and Mantel-Haenszel indices are seen to increase as a function of sample size. The larger the sample size, the larger the mean Chi-Square and its standard deviation. At first glance this may appear to be counter intuitive, but examination of these Chi-Square indices reveals that this is most likely an artifact of the way the indices are computed. With smaller sample sizes, the occurrence of zeros in the cells of observed correct and incorrect focal and reference group responses is more frequent, hence the occurrence of zero values for the contingency table is greater, and the overall mean lower. As the sample size increases, the absolute values of observed differences increases and thus the mean values of the indices increases.

Table 9 lists the Product-Moment correlations between all the possible pairs of DIF indices by comparison groups for ASVAB Form 15a, for the two largest sample sizes ( $N = 1,000$  and  $N = 2,000$ ). The correlations for each of the five indices for the subtests of the remaining ASVAB Forms are included in Appendix D. These correlations were calculated in order to determine the consistency among the five indices. Product-Moment correlations were calculated only for the two largest sample sizes, since the two IRT-based indices were computed only for these two sample sizes. Some of the correlations could not be computed as the item parameters for use in the LCHI index could not be estimated with LOGIST5 estimation procedures, as previously discussed.

The correlations in Table 9 indicate that there is not much difference in the strength of relationship among the indices between the two sample sizes in the baseline White-White comparison group for a given subtest. However, there are some differences from subtest to subtest in the baseline comparison group. This difference between subtests in the consistency of the DIF indices for the two largest sample sizes becomes more pronounced as one examines the values for the three comparison groups.

Table 9. Correlations Between DIF Indices on ASVAB Form 15a by Comparison Group and Two Sample Sizes.

| White vs White |       |       |        |      | Black vs White |       |       |        |      |      |
|----------------|-------|-------|--------|------|----------------|-------|-------|--------|------|------|
|                | FCH15 | MHCHI | MHOODS | LCHI | MSOS           | FCH15 | MHCHI | MHOODS | LCHI | MSOS |
| <b>GS</b>      |       |       |        |      |                |       |       |        |      |      |
| FCH15          | .38   | -.00  | .46    | .51  |                | .97*  | .86*  | .96*   | .97* |      |
| MHCHI          | .37   |       | .12    | .04  | .16            | .96*  | .75*  | .98*   | .97* |      |
| MHOODS         | .19   | -.29  |        | -.29 | -.10           | .85*  | .69*  | .74*   | .78* |      |
| LCHI           | .21   | .77*  | -.55   |      | .83*           | .80*  | .90*  | .46    | .99* |      |
| MSOS           | .46   | .77*  | -.06   | .79* |                | .91*  | .95*  | .61*   | .95* |      |
| <b>AR</b>      |       |       |        |      |                |       |       |        |      |      |
| FCH15          |       | .57*  | -.14   | .67* | .66*           |       | .86*  | .74*   | .44  | .64* |
| MHCHI          | .37   |       | .07    | .61* | .73*           | .74*  | .53   | .55*   | .68* |      |
| MHOODS         | -.11  | .16   |        | -.20 | -.02           | .81*  | .55*  | -.03   | .22  |      |
| LCHI           | .35   | .58*  | -.18   |      | .94*           | .06   | .29   | -.23   | .91* |      |
| MSOS           | .35   | .68*  | -.15   | .93* |                | .69*  | .77*  | .51    | .59* |      |
| <b>WK</b>      |       |       |        |      |                |       |       |        |      |      |
| FCH15          |       | .24   | -.04   | .26  | .07            |       | .93*  | .42    | .62* | .61* |
| MHCHI          | .43   |       | .11    | .59* | -.22           | .93*  |       | .18    | .83* | .59* |
| MHOODS         | -.36  | -.30  |        | -.39 | .07            | .55*  | .33   | -.32   | .02  |      |
| LCHI           | .06   | .09   | .36    |      | -.16           | .80*  | .93*  | .15    | .49  |      |
| MSOS           | .46   | .28   | -.19   | .72* |                | .97*  | .97*  | .46    | .88* |      |
| <b>PC</b>      |       |       |        |      |                |       |       |        |      |      |
| FCH15          |       | .43   | .45    | .27  | .62            |       | .88*  | .62    | .41  | .06  |
| MHCHI          | .68   |       | .39    | .25  | .21            | .91*  |       | .30    | .57  | .16  |
| MHOODS         | -.13  | .05   |        | .52  | .47            | .80*  | .59   |        | .04  | .06  |
| LCHI           | xx    | xx    | xx     |      | .59            | .02   | .31   | -.44   |      | .80* |
| MSOS           | .00   | .00   | .00    | .00  |                | .76*  | .82*  | .45    | .50  |      |
| <b>AS</b>      |       |       |        |      |                |       |       |        |      |      |
| FCH15          |       | .49   | .21    | .29  | .31            |       | .81*  | .49    | .12  | .51  |
| MHCHI          | .27   |       | .25    | .32  | .36            | .86*  |       | .02    | .12  | .37  |
| MHOODS         | -.17  | .29   |        | .17  | -.05           | .83*  | .59*  |        | -.17 | .12  |
| LCHI           | .18   | .03   | -.19   |      | .53            | -.08  | .16   | -.29   |      | .47  |
| MSOS           | .35   | .25   | -.20   | .82* |                | .65*  | .63*  | .38    | .41  |      |
| <b>MK</b>      |       |       |        |      |                |       |       |        |      |      |
| FCH15          |       | .65*  | .29    | .49  | .51            |       | .89*  | .33    | .68* | .83* |
| MHCHI          | .54   |       | .35    | .85* | .90*           | .95*  |       | .05    | .75* | .72* |
| MHOODS         | -.16  | -.05  |        | .61* | .41            | .68*  | .47   |        | .22  | .31  |
| LCHI           | .48   | .63*  | .37    |      | .95*           | .79*  | .84*  | .32    |      | .75* |
| MSOS           | .70*  | .88*  | -.11   | .74* |                | .80*  | .74*  | .61*   | .84* |      |
| <b>MC</b>      |       |       |        |      |                |       |       |        |      |      |
| FCH15          |       | .63*  | .07    | .57  | .70*           |       | .86*  | .81*   | .73* | .57  |
| MHCHI          | .66*  |       | .28    | .48  | .71*           | .82*  |       | .59*   | .64* | .64* |
| MHOODS         | .10   |       |        | -.42 | .26            | .84*  | .58   |        | .64* | .54  |
| LCHI           | .63*  | .77*  | -.14   |      | .70*           | .94*  | .82*  | .76*   |      | .83* |
| MSOS           | .66*  | .80*  | -.00   | .91* |                | .84*  | .88*  | .55    | .86* |      |
| <b>EI</b>      |       |       |        |      |                |       |       |        |      |      |
| FCH15          |       | .22   | -.05   | .40  | .51            |       | .83*  | .04    | .53  | .37  |
| MHCHI          | .36   |       | -.22   | .25  | .64            | .64   |       | -.33   | .23  | .41  |
| MHOODS         | -.43  | -.45  |        | -.32 | -.34           | .54   | -.07  |        | .68* | -.40 |
| LCHI           | .16   | .65*  | -.08   |      | .51            | .79*  | .27   | .74*   |      | .18  |
| MSOS           | -.08  | .39   | .29    | .68* |                | .18   | .21   | -.14   | .37  |      |

Table 9. (Concluded)

| Hispanic vs White |        |       |        |      | Female vs Male |  |       |       |        |      |      |
|-------------------|--------|-------|--------|------|----------------|--|-------|-------|--------|------|------|
|                   | FCHIS  | MHCBI | MHOODS | LCHI | MSOS           |  | FCHIS | MHCBI | MHOODS | LCHI | MSOS |
| GS                |        |       |        |      |                |  |       |       |        |      |      |
|                   | FCHIS  | .97*  | .87*   | .96* | .84*           |  |       | .98*  | .75*   | .89* | .90* |
|                   | MHCBI  | .98*  | .81*   | .93* | .92*           |  |       | .98*  | .72*   | .91* | .92* |
|                   | MHOODS | .87*  | .77*   | .80* | .61*           |  |       | .83*  | .78*   | .73* | .49  |
|                   | LCHI   | .88*  | .91*   | .61* | .83*           |  |       | .84*  | .91*   | .51  | .78* |
|                   | MSOS   | .90*  | .95*   | .61* | .94*           |  |       | .88*  | .89*   | .52  | .87* |
| AR                |        |       |        |      |                |  |       |       |        |      |      |
|                   | FCHIS  | .69*  | .46    | .52  | .61*           |  |       | .88*  | .08    | .82* | .83* |
|                   | MHCBI  | .68*  | .25    | .75* | .81*           |  |       | .97*  | .14    | .79* | .82* |
|                   | MHOODS | .67*  | .24    | .11  | .32            |  |       | .08   | .21    | .11  | .27  |
|                   | LCHI   | .32   | .53    | -.03 |                |  |       | .90*  | .90*   | -.07 |      |
|                   | MSOS   | .59*  | .68*   | .38  | .86*           |  |       | .91*  | .88*   | .09  | .94* |
| WK                |        |       |        |      |                |  |       |       |        |      |      |
|                   | FCHIS  | .97*  | .75*   | .93* | .97*           |  |       | .99*  | .42    | .68* | .70* |
|                   | MHCBI  | .99*  | .70*   | .96* | .98*           |  |       | .99*  | .40    | .72* | .69* |
|                   | MHOODS | .75*  | .72*   | .58* | .76*           |  |       | .55*  | .52*   | -.25 | -.04 |
|                   | LCHI   | .93*  | .94*   | .64* | .95*           |  |       | .97*  | .98*   | .39  | .52* |
|                   | MSOS   | .97*  | .98*   | .70* | .96*           |  |       | .79*  | .81*   | .63* | .79* |
| PC                |        |       |        |      |                |  |       |       |        |      |      |
|                   | FCHIS  | .96*  | .58    | .78* | .10            |  |       | .97*  | -.07   | .95* | .63  |
|                   | MHCBI  | .95*  | .48    | .82* | .22            |  |       | .99*  | .07    | .97* | .59  |
|                   | MHOODS | .59   | .48    | .58  | .01            |  |       | -.13  | -.10   | .15  | .50  |
|                   | LCHI   | .61   | .74*   | -.02 |                |  |       | .89*  | .90*   | .31  | .54  |
|                   | MSOS   | .62   | .65    | -.01 | .75*           |  |       | .81*  | .80*   | -.60 | .51  |
| AS                |        |       |        |      |                |  |       |       |        |      |      |
|                   | FCHIS  | .95*  | .66*   | .11  | .94*           |  |       | .58   | .57    | .78* | -.09 |
|                   | MHCBI  | .96*  | .47    | .01  | .92*           |  |       | .67*  | .14    | .63* | -.09 |
|                   | MHOODS | .74*  | .56    | -.01 | .54            |  |       | .70*  | .28    | .47  | -.09 |
|                   | LCHI   | .46   | .53    | .05  | .24            |  |       | .43   | .49    | .18  | .22  |
|                   | MSOS   | .89*  | .88*   | .55  | .68*           |  |       | .62*  | .64*   | .20  | .53  |
| MK                |        |       |        |      |                |  |       |       |        |      |      |
|                   | FCHIS  | .61*  | .69*   | .50  | .73*           |  |       | .68*  | .40    | .40  | .54  |
|                   | MHCBI  | .98*  | .40    | .61* | .72*           |  |       | .95*  | .34    | .47  | .41  |
|                   | MHOODS | .82*  | .72*   | .25  | .52            |  |       | .13   | .19    | .08  | .55  |
|                   | LCHI   | .92*  | .92*   | .72* | .88*           |  |       | .82*  | .76*   | -.03 | .75* |
|                   | MSOS   | .96*  | .94*   | .85* | .95*           |  |       | .73*  | .68*   | .45  | .81* |
| MC                |        |       |        |      |                |  |       |       |        |      |      |
|                   | FCHIS  | .55   | .52    | .37  | .52            |  |       | .85*  | .56    | .78* | .69* |
|                   | MHCBI  | .79*  | .34    | .60* | .61*           |  |       | .88*  | .16    | .66* | .82* |
|                   | MHOODS | .66*  | .50    | -.03 | .41            |  |       | .67*  | .30    | .42  | .03  |
|                   | LCHI   | .62*  | .74*   | .18  | .79*           |  |       | .89*  | .82*   | .51  | .81* |
|                   | MSOS   | .58   | .67*   | .19  | .90*           |  |       | .68*  | .83*   | .15  | .67* |
| EI                |        |       |        |      |                |  |       |       |        |      |      |
|                   | FCHIS  | .44   | .33    | .65  | .53            |  |       | .94*  | .47    | .75* | .83* |
|                   | MHCBI  | .51   | .02    | .09  | -.08           |  |       | .90*  | .32    | .80* | .77* |
|                   | MHOODS | .49   | .02    | .59  | .03            |  |       | .66*  | .36    | -.01 | .32  |
|                   | LCHI   | .80*  | .13    | .72* | .60            |  |       | .37   | .61    | -.24 |      |
|                   | MSOS   | .60   | .06    | .19  | .63            |  |       | .68*  | .73*   | .05  | .73* |

Note. N = 1,000 for values above the diagonal and N = 2,000 for values below the diagonal; \* p < .001. 'xx' for correlation entries indicates missing values for Lord's Chi-Square and Modified Sum of Squares. These values were not computed since parameter estimates from LOGIST5 did not converge.

The correlations between DIF indices among the subtests, are more substantial for the White-Black, White-Hispanic, and male-female comparison groups than for the baseline comparison. This may be due to the lack of variance in all the indices in the baseline comparisons. Inspection of Table 8 standard deviations for Form 15a for the baseline group and the comparison group confirm that the variances in the baseline samples was substantially smaller than any of the comparison groups.

The distributions of the Chi-Square indices and the Modified Sums of Squares were divided into low, moderate, high, and extreme values indicated in Tables 10, 11, 12, and 13 respectively. The values and distributions by categories of four indices (not including the MHODDS Ratio) show that few values of any of the indices were in the extreme ranges. This result is consistent with the findings of Linn et al. 1988, for ASVAB Form 14. The overall mean values of the Chi-Square indices tend to be lower in this study than the mean values obtained in Linn et al. (1988).

The Mantel-Haenszel Odds Ratio values were grouped into three categories. Table 14 shows the frequency of MHODDS values below .6534, by subtest, for Forms 15-17 of the ASVAB, indicating the number of items on that subtest showing DIF for MHODDS in favor of the focal group. The number of items on a given subtest with MHODDS ratio values greater than 1.5304 show DIF in favor of the reference group. The number of items with MHODDS values between .6534 and 1.5304 were grouped together as items with no practically significant DIF (Linn et al., 1988). These values correspond to a Delta Difference of 1.0 (Equation 3), and after Linn et al. (1988), and is taken here to indicate a practical difference in item functioning. These values indicate that there is a rough balance in the overall direction of the DIF across subtests.

#### Effects of Sample Sizes on Indices of DIF

For the Hispanic subgroup, there were not enough cases to draw random samples of 100, 500, 1,000 and 2,000 per form. Instead, random samples of sizes proportional to those values were drawn and used in the comparisons involving Hispanics. Thus, the IRT-based indices for the White-Hispanic comparison group were computed on Hispanic sample sizes of approximately 1/2 the N = 1,000 and N = 2,000 sizes of the White reference group.

**Table 10. Distribution of Full Chi-Square Values  
by Form and Subgroup Across Subtests**

| Range <sup>a</sup> | Total | White vs White |    |    |    |    |    |    |    |  |
|--------------------|-------|----------------|----|----|----|----|----|----|----|--|
|                    |       | GS             | AR | WK | PC | AS | MK | MC | EI |  |
| <u>Form 15a</u>    |       |                |    |    |    |    |    |    |    |  |
| Low                | 196   | 25             | 29 | 34 | 15 | 24 | 25 | 25 | 19 |  |
| Moderate           | 4     | 0              | 1  | 1  | 0  | 1  | 0  | 0  | 1  |  |
| High               | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 15b</u>    |       |                |    |    |    |    |    |    |    |  |
| Low                | 194   | 25             | 29 | 34 | 15 | 24 | 24 | 25 | 18 |  |
| Moderate           | 6     | 0              | 1  | 1  | 0  | 1  | 1  | 0  | 2  |  |
| High               | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 15c</u>    |       |                |    |    |    |    |    |    |    |  |
| Low                | 196   | 24             | 29 | 35 | 15 | 23 | 25 | 25 | 20 |  |
| Moderate           | 4     | 1              | 1  | 0  | 0  | 2  | 0  | 0  | 0  |  |
| High               | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 16a</u>    |       |                |    |    |    |    |    |    |    |  |
| Low                | 197   | 24             | 30 | 34 | 15 | 24 | 25 | 25 | 20 |  |
| Moderate           | 3     | 1              | 0  | 1  | 0  | 1  | 0  | 0  | 0  |  |
| High               | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 16b</u>    |       |                |    |    |    |    |    |    |    |  |
| Low                | 192   | 25             | 29 | 33 | 15 | 23 | 25 | 22 | 20 |  |
| Moderate           | 7     | 0              | 1  | 1  | 0  | 2  | 0  | 3  | 0  |  |
| High               | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 17a</u>    |       |                |    |    |    |    |    |    |    |  |
| Low                | 196   | 25             | 30 | 34 | 15 | 24 | 25 | 24 | 19 |  |
| Moderate           | 4     | 0              | 0  | 1  | 0  | 1  | 0  | 1  | 1  |  |
| High               | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 17b</u>    |       |                |    |    |    |    |    |    |    |  |
| Low                | 198   | 25             | 29 | 35 | 15 | 25 | 24 | 25 | 20 |  |
| Moderate           | 2     | 0              | 1  | 0  | 0  | 0  | 1  | 0  | 0  |  |
| High               | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |

Table 10. (Continued)

| Range <sup>a</sup> | Female vs Male |    |    |    |    |    |    |    |    |
|--------------------|----------------|----|----|----|----|----|----|----|----|
|                    | Total          | GS | AR | WK | PC | AS | MK | MC | EI |
| <u>Form 15a</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 70             | 2  | 14 | 14 | 7  | 6  | 13 | 9  | 5  |
| Moderate           | 123            | 20 | 16 | 19 | 8  | 19 | 12 | 15 | 14 |
| High               | 5              | 1  | 0  | 2  | 0  | 0  | 0  | 1  | 1  |
| Extreme            | 2              | 2  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 15b</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 81             | 8  | 15 | 15 | 6  | 7  | 11 | 11 | 8  |
| Moderate           | 112            | 13 | 15 | 19 | 9  | 18 | 14 | 13 | 11 |
| High               | 6              | 3  | 0  | 1  | 0  | 0  | 0  | 1  | 1  |
| Extreme            | 1              | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 15c</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 83             | 6  | 13 | 14 | 10 | 8  | 7  | 15 | 10 |
| Moderate           | 106            | 11 | 17 | 20 | 5  | 15 | 18 | 10 | 10 |
| High               | 9              | 8  | 0  | 0  | 0  | 1  | 0  | 0  | 0  |
| Extreme            | 2              | 0  | 0  | 1  | 0  | 1  | 0  | 0  | 0  |
| <u>Form 16a</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 83             | 13 | 14 | 14 | 8  | 9  | 8  | 9  | 8  |
| Moderate           | 111            | 10 | 16 | 20 | 7  | 14 | 17 | 16 | 11 |
| High               | 5              | 1  | 0  | 1  | 0  | 2  | 0  | 0  | 1  |
| Extreme            | 1              | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 16b</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 90             | 12 | 13 | 18 | 7  | 8  | 7  | 14 | 11 |
| Moderate           | 105            | 11 | 17 | 15 | 8  | 16 | 18 | 11 | 9  |
| High               | 4              | 1  | 0  | 2  | 0  | 1  | 0  | 0  | 0  |
| Extreme            | 1              | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 17a</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 92             | 2  | 18 | 13 | 11 | 6  | 15 | 12 | 9  |
| Moderate           | 106            | 16 | 12 | 21 | 4  | 19 | 10 | 13 | 11 |
| High               | 1              | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| Extreme            | 1              | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 17b</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 80             | 4  | 14 | 13 | 8  | 10 | 13 | 10 | 8  |
| Moderate           | 116            | 20 | 15 | 21 | 6  | 15 | 12 | 15 | 12 |
| High               | 4              | 1  | 1  | 1  | 1  | 0  | 0  | 0  | 0  |
| Extreme            | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

Table 10. (Continued)

| Range <sup>a</sup> | Black vs White |    |    |    |    |    |    |    |    |
|--------------------|----------------|----|----|----|----|----|----|----|----|
|                    | Total          | GS | AR | WK | PC | AS | MK | MC | EI |
| <u>Form 15a</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 91             | 9  | 19 | 9  | 8  | 11 | 13 | 14 | 8  |
| Moderate           | 103            | 15 | 11 | 23 | 7  | 14 | 11 | 10 | 12 |
| High               | 5              | 1  | 0  | 2  | 0  | 0  | 1  | 1  | 0  |
| Extreme            | 1              | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 15b</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 85             | 8  | 14 | 12 | 8  | 11 | 10 | 15 | 7  |
| Moderate           | 112            | 16 | 14 | 23 | 7  | 14 | 15 | 10 | 13 |
| High               | 2              | 0  | 2  | 0  | 0  | 0  | 0  | 0  | 0  |
| Extreme            | 1              | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 15c</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 84             | 7  | 12 | 11 | 5  | 14 | 5  | 17 | 13 |
| Moderate           | 114            | 18 | 18 | 22 | 10 | 11 | 20 | 8  | 7  |
| High               | 2              | 0  | 0  | 2  | 0  | 0  | 0  | 0  | 0  |
| Extreme            | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 16a</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 88             | 12 | 14 | 16 | 8  | 10 | 9  | 11 | 8  |
| Moderate           | 109            | 12 | 16 | 18 | 7  | 15 | 16 | 14 | 11 |
| High               | 3              | 1  | 0  | 1  | 0  | 0  | 0  | 0  | 1  |
| Extreme            | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 16b</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 93             | 13 | 12 | 18 | 8  | 6  | 9  | 16 | 11 |
| Moderate           | 101            | 10 | 18 | 15 | 7  | 19 | 15 | 9  | 8  |
| High               | 4              | 2  | 0  | 0  | 0  | 0  | 1  | 0  | 1  |
| Extreme            | 1              | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 17a</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 82             | 9  | 13 | 16 | 6  | 6  | 11 | 15 | 6  |
| Moderate           | 116            | 16 | 16 | 19 | 9  | 18 | 14 | 10 | 14 |
| High               | 1              | 0  | 0  | 0  | 0  | 1  | 0  | 0  | 0  |
| Extreme            | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 17b</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 87             | 10 | 15 | 15 | 6  | 11 | 9  | 15 | 6  |
| Moderate           | 109            | 14 | 15 | 18 | 9  | 13 | 16 | 10 | 14 |
| High               | 4              | 1  | 0  | 2  | 0  | 1  | 0  | 0  | 0  |
| Extreme            | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

Table 10. (Concluded)

| Range <sup>a</sup> | Hispanic vs White |    |    |    |    |    |    |    |    |
|--------------------|-------------------|----|----|----|----|----|----|----|----|
|                    | Total             | GS | AR | WK | PC | AS | MK | MC | EI |
| <u>Form 15a</u>    |                   |    |    |    |    |    |    |    |    |
| Low                | 120               | 17 | 23 | 11 | 11 | 9  | 20 | 16 | 13 |
| Moderate           | 76                | 7  | 7  | 21 | 4  | 16 | 5  | 9  | 7  |
| High               | 3                 | 1  | 0  | 2  | 0  | 0  | 0  | 0  | 0  |
| Extreme            | 1                 | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 15b</u>    |                   |    |    |    |    |    |    |    |    |
| Low                | 105               | 12 | 22 | 12 | 8  | 8  | 19 | 13 | 11 |
| Moderate           | 91                | 12 | 8  | 20 | 7  | 17 | 6  | 12 | 9  |
| High               | 4                 | 1  | 0  | 3  | 0  | 0  | 0  | 0  | 0  |
| Extreme            | 0                 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 15c</u>    |                   |    |    |    |    |    |    |    |    |
| Low                | 107               | 12 | 20 | 13 | 4  | 15 | 14 | 18 | 11 |
| Moderate           | 89                | 13 | 10 | 18 | 11 | 10 | 11 | 7  | 9  |
| High               | 3                 | 0  | 0  | 3  | 0  | 0  | 0  | 0  | 0  |
| Extreme            | 1                 | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 16a</u>    |                   |    |    |    |    |    |    |    |    |
| Low                | 110               | 14 | 23 | 12 | 9  | 9  | 16 | 17 | 10 |
| Moderate           | 89                | 10 | 7  | 23 | 6  | 16 | 9  | 8  | 10 |
| High               | 1                 | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| Extreme            | 0                 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 16b</u>    |                   |    |    |    |    |    |    |    |    |
| Low                | 107               | 13 | 20 | 11 | 8  | 9  | 16 | 16 | 14 |
| Moderate           | 91                | 11 | 10 | 23 | 7  | 16 | 9  | 9  | 6  |
| High               | 2                 | 1  | 0  | 1  | 0  | 0  | 0  | 0  | 0  |
| Extreme            | 0                 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 17a</u>    |                   |    |    |    |    |    |    |    |    |
| Low                | 112               | 12 | 20 | 16 | 8  | 10 | 18 | 17 | 11 |
| Moderate           | 83                | 12 | 9  | 18 | 7  | 13 | 7  | 8  | 9  |
| High               | 4                 | 1  | 0  | 1  | 0  | 2  | 0  | 0  | 0  |
| Extreme            | 0                 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 17b</u>    |                   |    |    |    |    |    |    |    |    |
| Low                | 110               | 12 | 22 | 11 | 10 | 8  | 18 | 18 | 11 |
| Moderate           | 84                | 12 | 8  | 21 | 5  | 15 | 7  | 7  | 9  |
| High               | 6                 | 1  | 0  | 3  | 0  | 2  | 0  | 0  | 0  |
| Extreme            | 0                 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

Note. N = 2,000.

<sup>a</sup>Low: Full Chi-Sq < 10.

Moderate: 10 ≤ Full Chi-Sq < 100.

High: 100 ≤ Full Chi-Sq < 200.

Extreme: 200 ≤ Full Chi-Sq.

**Table 11. Distribution of Mantel-Haenszel Chi-Square Values by Form and Subgroup Across Subtests**

| Range <sup>a</sup> | Total | White vs White |    |    |    |    |    |    |    |  |
|--------------------|-------|----------------|----|----|----|----|----|----|----|--|
|                    |       | GS             | AR | WK | PC | AS | MK | MC | EI |  |
| <u>Form 15a</u>    |       |                |    |    |    |    |    |    |    |  |
| Low                | 200   | 25             | 30 | 35 | 15 | 25 | 25 | 25 | 20 |  |
| Moderate           | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| High               | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 15b</u>    |       |                |    |    |    |    |    |    |    |  |
| Low                | 200   | 25             | 30 | 35 | 15 | 25 | 25 | 25 | 20 |  |
| Moderate           | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| High               | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 15c</u>    |       |                |    |    |    |    |    |    |    |  |
| Low                | 200   | 25             | 30 | 35 | 15 | 25 | 25 | 25 | 20 |  |
| Moderate           | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| High               | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 16a</u>    |       |                |    |    |    |    |    |    |    |  |
| Low                | 200   | 25             | 30 | 35 | 15 | 25 | 25 | 25 | 20 |  |
| Moderate           | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| High               | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 16b</u>    |       |                |    |    |    |    |    |    |    |  |
| Low                | 200   | 25             | 30 | 35 | 15 | 25 | 25 | 25 | 20 |  |
| Moderate           | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| High               | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 17a</u>    |       |                |    |    |    |    |    |    |    |  |
| Low                | 200   | 25             | 30 | 35 | 15 | 25 | 25 | 25 | 20 |  |
| Moderate           | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| High               | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 17b</u>    |       |                |    |    |    |    |    |    |    |  |
| Low                | 200   | 25             | 30 | 35 | 15 | 25 | 25 | 25 | 20 |  |
| Moderate           | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| High               | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |

Table 11. (Continued)

| Range <sup>a</sup> | Total | Female vs Male |    |    |    |    |    |    |    |  |
|--------------------|-------|----------------|----|----|----|----|----|----|----|--|
|                    |       | GS             | AR | WK | PC | AS | MK | MC | EI |  |
| <u>Form 15a</u>    |       |                |    |    |    |    |    |    |    |  |
| Low                | 112   | 6              | 21 | 18 | 7  | 14 | 16 | 19 | 11 |  |
| Moderate           | 82    | 15             | 9  | 15 | 8  | 11 | 9  | 6  | 9  |  |
| High               | 6     | 4              | 0  | 2  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 15b</u>    |       |                |    |    |    |    |    |    |    |  |
| Low                | 124   | 9              | 21 | 23 | 11 | 14 | 16 | 17 | 13 |  |
| Moderate           | 71    | 12             | 9  | 12 | 4  | 11 | 9  | 8  | 6  |  |
| High               | 5     | 4              | 0  | 0  | 0  | 0  | 0  | 0  | 1  |  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 15c</u>    |       |                |    |    |    |    |    |    |    |  |
| Low                | 117   | 8              | 23 | 17 | 13 | 10 | 15 | 18 | 13 |  |
| Moderate           | 75    | 12             | 7  | 17 | 2  | 13 | 10 | 7  | 7  |  |
| High               | 7     | 5              | 0  | 0  | 0  | 2  | 0  | 0  | 0  |  |
| Extreme            | 1     | 0              | 0  | 1  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 16a</u>    |       |                |    |    |    |    |    |    |    |  |
| Low                | 122   | 13             | 21 | 16 | 13 | 16 | 12 | 19 | 12 |  |
| Moderate           | 72    | 7              | 9  | 18 | 2  | 9  | 13 | 6  | 8  |  |
| High               | 4     | 3              | 0  | 1  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 2     | 2              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 16b</u>    |       |                |    |    |    |    |    |    |    |  |
| Low                | 124   | 14             | 20 | 24 | 10 | 14 | 11 | 19 | 12 |  |
| Moderate           | 72    | 9              | 10 | 9  | 5  | 11 | 14 | 6  | 8  |  |
| High               | 3     | 1              | 0  | 2  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 1     | 1              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 17a</u>    |       |                |    |    |    |    |    |    |    |  |
| Low                | 131   | 10             | 20 | 18 | 15 | 15 | 20 | 21 | 12 |  |
| Moderate           | 67    | 14             | 10 | 16 | 0  | 10 | 5  | 4  | 8  |  |
| High               | 1     | 1              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 1     | 0              | 0  | 1  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 17b</u>    |       |                |    |    |    |    |    |    |    |  |
| Low                | 133   | 10             | 23 | 19 | 10 | 18 | 19 | 19 | 15 |  |
| Moderate           | 63    | 14             | 6  | 15 | 4  | 7  | 6  | 6  | 5  |  |
| High               | 4     | 1              | 1  | 1  | 1  | 0  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |

Table 11. (Continued)

| Range <sup>a</sup> | Total | Black vs White |    |    |    |    |    |    |    |
|--------------------|-------|----------------|----|----|----|----|----|----|----|
|                    |       | GS             | AR | WK | PC | AS | MK | MC | EI |
| <u>Form 15a</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 141   | 16             | 23 | 20 | 11 | 20 | 18 | 18 | 15 |
| Moderate           | 56    | 8              | 7  | 13 | 4  | 5  | 7  | 7  | 5  |
| High               | 3     | 1              | 0  | 2  | 0  | 0  | 0  | 0  | 0  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 15b</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 132   | 14             | 22 | 22 | 9  | 18 | 16 | 18 | 13 |
| Moderate           | 67    | 10             | 8  | 13 | 6  | 7  | 9  | 7  | 7  |
| High               | 1     | 1              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 15c</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 134   | 13             | 26 | 18 | 10 | 17 | 10 | 23 | 17 |
| Moderate           | 65    | 12             | 4  | 16 | 5  | 8  | 15 | 2  | 3  |
| High               | 1     | 0              | 0  | 1  | 0  | 0  | 0  | 0  | 0  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 16a</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 136   | 16             | 19 | 23 | 10 | 20 | 13 | 22 | 13 |
| Moderate           | 63    | 8              | 11 | 12 | 5  | 5  | 12 | 3  | 7  |
| High               | 1     | 1              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 16b</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 140   | 16             | 21 | 26 | 11 | 16 | 15 | 22 | 13 |
| Moderate           | 57    | 9              | 9  | 7  | 4  | 9  | 9  | 3  | 7  |
| High               | 2     | 0              | 0  | 1  | 0  | 0  | 1  | 0  | 0  |
| Extreme            | 1     | 0              | 0  | 1  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 17a</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 144   | 18             | 25 | 23 | 11 | 18 | 17 | 21 | 11 |
| Moderate           | 55    | 7              | 5  | 12 | 4  | 6  | 8  | 4  | 9  |
| High               | 1     | 0              | 0  | 0  | 0  | 1  | 0  | 0  | 0  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 17b</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 144   | 16             | 25 | 26 | 9  | 17 | 13 | 22 | 16 |
| Moderate           | 53    | 8              | 5  | 8  | 6  | 7  | 12 | 3  | 4  |
| High               | 3     | 1              | 0  | 1  | 0  | 1  | 0  | 0  | 0  |

Table 11. (Concluded)

| Hispanic vs White  |       |    |    |    |    |    |    |    |    |  |
|--------------------|-------|----|----|----|----|----|----|----|----|--|
| Range <sup>a</sup> | Total | GS | AR | WK | PC | AS | MK | MC | EI |  |
| <u>Form 15a</u>    |       |    |    |    |    |    |    |    |    |  |
| Low                | 157   | 19 | 28 | 20 | 14 | 14 | 23 | 21 | 18 |  |
| Moderate           | 42    | 6  | 2  | 14 | 1  | 11 | 2  | 4  | 2  |  |
| High               | 0     | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 1     | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 15b</u>    |       |    |    |    |    |    |    |    |    |  |
| Low                | 133   | 16 | 24 | 15 | 10 | 13 | 23 | 17 | 15 |  |
| Moderate           | 65    | 9  | 6  | 18 | 5  | 12 | 2  | 8  | 5  |  |
| High               | 2     | 0  | 0  | 2  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 15c</u>    |       |    |    |    |    |    |    |    |    |  |
| Low                | 148   | 16 | 27 | 17 | 12 | 17 | 20 | 23 | 16 |  |
| Moderate           | 50    | 9  | 3  | 16 | 3  | 8  | 5  | 2  | 4  |  |
| High               | 1     | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 1     | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 16a</u>    |       |    |    |    |    |    |    |    |    |  |
| Low                | 154   | 17 | 26 | 17 | 13 | 19 | 22 | 24 | 16 |  |
| Moderate           | 45    | 7  | 4  | 18 | 2  | 6  | 3  | 1  | 4  |  |
| High               | 1     | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 16b</u>    |       |    |    |    |    |    |    |    |    |  |
| Low                | 161   | 14 | 29 | 22 | 13 | 20 | 24 | 24 | 15 |  |
| Moderate           | 38    | 11 | 1  | 12 | 2  | 5  | 1  | 1  | 5  |  |
| High               | 1     | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 17a</u>    |       |    |    |    |    |    |    |    |    |  |
| Low                | 163   | 21 | 27 | 24 | 15 | 14 | 23 | 22 | 17 |  |
| Moderate           | 34    | 3  | 3  | 10 | 0  | 10 | 2  | 3  | 3  |  |
| High               | 3     | 1  | 0  | 1  | 0  | 1  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 17b</u>    |       |    |    |    |    |    |    |    |    |  |
| Low                | 147   | 18 | 26 | 18 | 14 | 11 | 21 | 22 | 17 |  |
| Moderate           | 49    | 6  | 4  | 16 | 1  | 12 | 4  | 3  | 3  |  |
| High               | 4     | 1  | 0  | 1  | 0  | 2  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |

Note. N = 2,000.

<sup>a</sup>Low: MH Chi-Sq < 10.

Moderate: 10 ≤ MH Chi-Sq < 100.

High: 100 ≤ MH Chi-Sq < 200.

Extreme: 200 ≤ MH Chi-Sq.

**Table 12. Distribution of Lord's Chi-Square Values by Form and Subgroup Across Subtests**

| Range <sup>a</sup> | Total | White vs White |    |    |    |    |    |    |    |
|--------------------|-------|----------------|----|----|----|----|----|----|----|
|                    |       | GS             | AR | WK | PC | AS | MK | MC | ET |
| <u>Form 15a</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 174   | 24             | 30 | 34 | 0  | 16 | 25 | 25 | 20 |
| Moderate           | 11    | 1              | 0  | 1  | 0  | 9  | 0  | 0  | 0  |
| High               | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 15b</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 99    | 15             | 21 | 12 | 0  | 17 | 15 | 14 | 5  |
| Moderate           | 62    | 7              | 8  | 16 | 0  | 8  | 6  | 6  | 11 |
| High               | 20    | 3              | 1  | 5  | 0  | 0  | 2  | 5  | 4  |
| Extreme            | 4     | 0              | 0  | 2  | 0  | 0  | 2  | 0  | 0  |
| <u>Form 15c</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 95    | 13             | 14 | 24 | 9  | 11 | 9  | 7  | 8  |
| Moderate           | 83    | 11             | 14 | 7  | 3  | 13 | 14 | 12 | 9  |
| High               | 18    | 1              | 2  | 4  | 2  | 1  | 2  | 5  | 1  |
| Extreme            | 3     | 0              | 0  | 0  | 1  | 0  | 0  | 1  | 1  |
| <u>Form 16a</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 114   | 13             | 18 | 24 | 6  | 14 | 15 | 15 | 9  |
| Moderate           | 67    | 8              | 11 | 9  | 6  | 10 | 9  | 6  | 8  |
| High               | 15    | 4              | 1  | 2  | 3  | 0  | 0  | 3  | 2  |
| Extreme            | 4     | 0              | 0  | 0  | 0  | 1  | 1  | 1  | 1  |
| <u>Form 16b</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 98    | 13             | 15 | 21 | 4  | 15 | 11 | 8  | 11 |
| Moderate           | 78    | 9              | 10 | 14 | 9  | 9  | 10 | 10 | 7  |
| High               | 21    | 3              | 5  | 0  | 2  | 0  | 4  | 6  | 1  |
| Extreme            | 3     | 0              | 0  | 0  | 0  | 1  | 0  | 1  | 1  |
| <u>Form 17a</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 84    | 5              | 7  | 22 | 4  | 10 | 12 | 14 | 10 |
| Moderate           | 89    | 15             | 17 | 13 | 7  | 12 | 10 | 8  | 7  |
| High               | 19    | 2              | 5  | 0  | 2  | 3  | 2  | 2  | 3  |
| Extreme            | 8     | 3              | 1  | 0  | 2  | 0  | 1  | 1  | 0  |
| <u>Form 17b</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 84    | 8              | 14 | 18 | 0  | 11 | 16 | 12 | 5  |
| Moderate           | 78    | 14             | 12 | 16 | 0  | 13 | 5  | 8  | 10 |
| High               | 17    | 1              | 3  | 1  | 0  | 1  | 3  | 4  | 4  |
| Extreme            | 6     | 2              | 1  | 0  | 0  | 0  | 1  | 1  | 1  |

Table 12. (Continued)

| Range <sup>a</sup> | Female vs Male |    |    |    |    |    |    |    |    |
|--------------------|----------------|----|----|----|----|----|----|----|----|
|                    | Total          | GS | AR | WK | PC | AS | MK | MC | EI |
| <u>Form 15a</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 78             | 6  | 18 | 12 | 5  | 5  | 17 | 10 | 5  |
| Moderate           | 94             | 12 | 11 | 16 | 7  | 13 | 8  | 14 | 13 |
| High               | 17             | 3  | 1  | 4  | 3  | 4  | 0  | 1  | 1  |
| Extreme            | 10             | 4  | 0  | 2  | 0  | 3  | 0  | 0  | 1  |
| <u>Form 15b</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 85             | 8  | 19 | 12 | 9  | 10 | 10 | 10 | 7  |
| Moderate           | 91             | 11 | 9  | 17 | 5  | 10 | 15 | 14 | 10 |
| High               | 16             | 2  | 2  | 5  | 0  | 4  | 0  | 1  | 2  |
| Extreme            | 8              | 4  | 0  | 1  | 1  | 1  | 0  | 0  | 1  |
| <u>Form 15c</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 70             | 4  | 18 | 9  | 7  | 10 | 6  | 6  | 10 |
| Moderate           | 104            | 10 | 11 | 20 | 7  | 11 | 18 | 18 | 9  |
| High               | 18             | 6  | 1  | 4  | 1  | 3  | 1  | 1  | 1  |
| Extreme            | 8              | 5  | 0  | 2  | 0  | 1  | 0  | 0  | 0  |
| <u>Form 16a</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 83             | 11 | 19 | 12 | 5  | 10 | 8  | 13 | 5  |
| Moderate           | 93             | 10 | 10 | 16 | 9  | 11 | 15 | 10 | 12 |
| High               | 20             | 3  | 1  | 4  | 1  | 4  | 2  | 2  | 3  |
| Extreme            | 4              | 1  | 0  | 3  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 16b</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 73             | 7  | 16 | 5  | 8  | 8  | 5  | 15 | 9  |
| Moderate           | 99             | 12 | 12 | 20 | 7  | 12 | 18 | 8  | 10 |
| High               | 22             | 3  | 2  | 7  | 0  | 5  | 2  | 2  | 1  |
| Extreme            | 6              | 3  | 0  | 3  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 17a</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 92             | 9  | 21 | 17 | 3  | 8  | 16 | 13 | 5  |
| Moderate           | 82             | 9  | 9  | 14 | 10 | 9  | 9  | 12 | 10 |
| High               | 22             | 6  | 0  | 2  | 2  | 7  | 0  | 0  | 5  |
| Extreme            | 4              | 1  | 0  | 2  | 0  | 1  | 0  | 0  | 0  |
| <u>Form 17b</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 78             | 9  | 9  | 13 | 8  | 7  | 13 | 9  | 10 |
| Moderate           | 97             | 10 | 19 | 16 | 5  | 10 | 11 | 16 | 10 |
| High               | 21             | 5  | 1  | 5  | 1  | 8  | 1  | 0  | 0  |
| Extreme            | 4              | 1  | 1  | 1  | 1  | 0  | 0  | 0  | 0  |

Table 12. (Continued)

| Range <sup>a</sup> | Total | Black vs White |    |    |    |    |    |    |    |
|--------------------|-------|----------------|----|----|----|----|----|----|----|
|                    |       | GS             | AR | WK | PC | AS | MK | MC | EI |
| <u>Form 15a</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 95    | 13             | 14 | 14 | 5  | 14 | 14 | 14 | 7  |
| Moderate           | 91    | 11             | 15 | 18 | 10 | 8  | 7  | 10 | 12 |
| High               | 11    | 1              | 1  | 1  | 0  | 2  | 4  | 1  | 1  |
| Extreme            | 3     | 0              | 0  | 2  | 0  | 1  | 0  | 0  | 0  |
| <u>Form 15b</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 76    | 10             | 15 | 6  | 0  | 16 | 8  | 14 | 7  |
| Moderate           | 88    | 13             | 12 | 17 | 0  | 9  | 15 | 10 | 12 |
| High               | 18    | 1              | 3  | 10 | 0  | 0  | 2  | 1  | 1  |
| Extreme            | 3     | 1              | 0  | 2  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 15c</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 86    | 11             | 16 | 17 | 3  | 10 | 7  | 12 | 10 |
| Moderate           | 99    | 13             | 14 | 14 | 6  | 15 | 15 | 13 | 9  |
| High               | 10    | 1              | 0  | 2  | 4  | 0  | 3  | 0  | 0  |
| Extreme            | 4     | 0              | 0  | 2  | 2  | 0  | 0  | 0  | 0  |
| <u>Form 16a</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 75    | 9              | 11 | 18 | 4  | 0  | 10 | 12 | 11 |
| Moderate           | 80    | 12             | 17 | 11 | 10 | 0  | 11 | 12 | 7  |
| High               | 17    | 2              | 2  | 6  | 1  | 0  | 3  | 1  | 2  |
| Extreme            | 3     | 2              | 0  | 0  | 0  | 0  | 1  | 0  | 0  |
| <u>Form 16b</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 80    | 14             | 9  | 5  | 6  | 10 | 10 | 15 | 11 |
| Moderate           | 97    | 9              | 20 | 19 | 7  | 12 | 12 | 10 | 8  |
| High               | 17    | 2              | 1  | 7  | 2  | 1  | 3  | 0  | 1  |
| Extreme            | 5     | 0              | 0  | 4  | 0  | 1  | 0  | 0  | 0  |
| <u>Form 17a</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 92    | 7              | 16 | 18 | 10 | 8  | 12 | 15 | 6  |
| Moderate           | 90    | 13             | 14 | 12 | 3  | 14 | 11 | 10 | 13 |
| High               | 15    | 4              | 0  | 4  | 1  | 3  | 2  | 0  | 1  |
| Extreme            | 1     | 0              | 0  | 1  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 17b</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 71    | 8              | 16 | 15 | 0  | 1  | 9  | 17 | 5  |
| Moderate           | 99    | 15             | 14 | 17 | 0  | 17 | 14 | 8  | 14 |
| High               | 11    | 1              | 0  | 1  | 0  | 6  | 2  | 0  | 1  |
| Extreme            | 4     | 1              | 0  | 2  | 0  | 1  | 0  | 0  | 0  |

Table 12. (Concluded)

| Range <sup>a</sup> | Total | Hispanic vs White |    |    |    |    |    |    |    |  |
|--------------------|-------|-------------------|----|----|----|----|----|----|----|--|
|                    |       | GS                | AR | WK | PC | AS | MK | MC | EI |  |
| <u>Form 15a</u>    |       |                   |    |    |    |    |    |    |    |  |
| Low                | 119   | 18                | 19 | 15 | 9  | 11 | 20 | 17 | 10 |  |
| Moderate           | 74    | 6                 | 11 | 17 | 6  | 11 | 5  | 8  | 10 |  |
| High               | 4     | 1                 | 0  | 2  | 0  | 1  | 0  | 0  | 0  |  |
| Extreme            | 3     | 0                 | 0  | 1  | 0  | 2  | 0  | 0  | 0  |  |
| <u>Form 15b</u>    |       |                   |    |    |    |    |    |    |    |  |
| Low                | 92    | 13                | 21 | 5  | 0  | 9  | 20 | 12 | 12 |  |
| Moderate           | 67    | 9                 | 7  | 12 | 0  | 13 | 5  | 13 | 8  |  |
| High               | 22    | 3                 | 2  | 14 | 0  | 3  | 0  | 0  | 0  |  |
| Extreme            | 4     | 0                 | 0  | 4  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 15c</u>    |       |                   |    |    |    |    |    |    |    |  |
| Low                | 114   | 18                | 20 | 12 | 9  | 13 | 12 | 18 | 12 |  |
| Moderate           | 74    | 7                 | 9  | 15 | 5  | 11 | 13 | 7  | 7  |  |
| High               | 8     | 0                 | 1  | 6  | 0  | 1  | 0  | 0  | 0  |  |
| Extreme            | 2     | 0                 | 0  | 2  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 16a</u>    |       |                   |    |    |    |    |    |    |    |  |
| Low                | 111   | 16                | 19 | 14 | 5  | 7  | 16 | 21 | 13 |  |
| Moderate           | 76    | 8                 | 11 | 14 | 10 | 13 | 9  | 4  | 7  |  |
| High               | 10    | 0                 | 0  | 7  | 0  | 3  | 0  | 0  | 0  |  |
| Extreme            | 3     | 1                 | 0  | 0  | 0  | 2  | 0  | 0  | 0  |  |
| <u>Form 16b</u>    |       |                   |    |    |    |    |    |    |    |  |
| Low                | 98    | 12                | 15 | 5  | 9  | 15 | 15 | 13 | 14 |  |
| Moderate           | 82    | 12                | 15 | 17 | 5  | 6  | 10 | 12 | 5  |  |
| High               | 18    | 1                 | 0  | 12 | 1  | 3  | 0  | 0  | 1  |  |
| Extreme            | 2     | 0                 | 0  | 1  | 0  | 1  | 0  | 0  | 0  |  |
| <u>Form 17a</u>    |       |                   |    |    |    |    |    |    |    |  |
| Low                | 119   | 13                | 21 | 20 | 4  | 11 | 21 | 21 | 8  |  |
| Moderate           | 72    | 11                | 9  | 13 | 10 | 10 | 4  | 4  | 11 |  |
| High               | 7     | 1                 | 0  | 1  | 1  | 3  | 0  | 0  | 1  |  |
| Extreme            | 2     | 0                 | 0  | 1  | 0  | 1  | 0  | 0  | 0  |  |
| <u>Form 17b</u>    |       |                   |    |    |    |    |    |    |    |  |
| Low                | 94    | 15                | 23 | 8  | 0  | 6  | 19 | 17 | 6  |  |
| Moderate           | 76    | 8                 | 7  | 20 | 0  | 14 | 6  | 8  | 13 |  |
| High               | 8     | 1                 | 0  | 4  | 0  | 3  | 0  | 0  | 0  |  |
| Extreme            | 7     | 1                 | 0  | 3  | 0  | 2  | 0  | 0  | 1  |  |

Note. N = 2,000.

<sup>a</sup>Low: Lord's Chi-Sq < 10.

Moderate: 10 ≤ Lord's Chi-Sq < 50.

High: 50 ≤ Lord's Chi-Sq < 100.

Extreme: 100 ≤ Lord's Chi-Sq.

**Table 13. Distribution of Modified Sum of Squares  
Values by Form and Subgroup Across Subtests**

| White vs White     |       |    |    |    |    |    |    |    |    |  |
|--------------------|-------|----|----|----|----|----|----|----|----|--|
| Range <sup>a</sup> | Total | GS | AR | WK | PC | AS | MK | MC | E1 |  |
| <u>Form 15a</u>    |       |    |    |    |    |    |    |    |    |  |
| Low                | 185   | 25 | 30 | 35 | 0  | 25 | 25 | 25 | 20 |  |
| Moderate           | 0     | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| High               | 0     | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 15b</u>    |       |    |    |    |    |    |    |    |    |  |
| Low                | 177   | 24 | 28 | 35 | 0  | 25 | 21 | 24 | 20 |  |
| Moderate           | 8     | 1  | 2  | 0  | 0  | 0  | 4  | 1  | 0  |  |
| High               | 0     | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 15c</u>    |       |    |    |    |    |    |    |    |    |  |
| Low                | 185   | 25 | 29 | 35 | 6  | 24 | 23 | 23 | 20 |  |
| Moderate           | 11    | 0  | 1  | 0  | 6  | 1  | 1  | 2  | 0  |  |
| High               | 2     | 0  | 0  | 0  | 1  | 0  | 1  | 0  | 0  |  |
| Extreme            | 2     | 0  | 0  | 0  | 2  | 0  | 0  | 0  | 0  |  |
| <u>Form 16a</u>    |       |    |    |    |    |    |    |    |    |  |
| Low                | 194   | 24 | 30 | 35 | 13 | 24 | 24 | 25 | 19 |  |
| Moderate           | 5     | 1  | 0  | 0  | 2  | 1  | 0  | 0  | 1  |  |
| High               | 1     | 0  | 0  | 0  | 0  | 0  | 1  | 0  | 0  |  |
| Extreme            | 0     | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 16b</u>    |       |    |    |    |    |    |    |    |    |  |
| Low                | 193   | 25 | 28 | 34 | 14 | 24 | 23 | 25 | 20 |  |
| Moderate           | 5     | 0  | 2  | 1  | 1  | 1  | 0  | 0  | 0  |  |
| High               | 2     | 0  | 0  | 0  | 0  | 0  | 2  | 0  | 0  |  |
| Extreme            | 0     | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 17a</u>    |       |    |    |    |    |    |    |    |    |  |
| Low                | 195   | 25 | 30 | 34 | 14 | 25 | 22 | 25 | 20 |  |
| Moderate           | 4     | 0  | 0  | 1  | 1  | 0  | 2  | 0  | 0  |  |
| High               | 1     | 0  | 0  | 0  | 0  | 0  | 1  | 0  | 0  |  |
| Extreme            | 0     | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 17b</u>    |       |    |    |    |    |    |    |    |    |  |
| Low                | 182   | 25 | 30 | 34 | 0  | 25 | 24 | 24 | 20 |  |
| Moderate           | 1     | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  |  |
| High               | 2     | 0  | 0  | 0  | 0  | 0  | 1  | 1  | 0  |  |
| Extreme            | 0     | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |

Table 13. (Continued)

| Range <sup>a</sup> | Female vs Male |    |    |    |    |    |    |    |    |
|--------------------|----------------|----|----|----|----|----|----|----|----|
|                    | Total          | GS | AR | WK | PC | AS | MK | MC | EI |
| <u>Form 15a</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 166            | 18 | 30 | 24 | 12 | 18 | 25 | 23 | 16 |
| Moderate           | 24             | 3  | 0  | 8  | 2  | 7  | 0  | 2  | 2  |
| High               | 9              | 3  | 0  | 3  | 1  | 0  | 0  | 0  | 2  |
| Extreme            | 1              | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 15b</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 173            | 19 | 30 | 29 | 13 | 19 | 25 | 24 | 14 |
| Moderate           | 20             | 2  | 0  | 5  | 2  | 6  | 0  | 1  | 4  |
| High               | 6              | 3  | 0  | 1  | 0  | 0  | 0  | 0  | 2  |
| Extreme            | 1              | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 15c</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 164            | 14 | 30 | 32 | 4  | 18 | 23 | 24 | 19 |
| Moderate           | 21             | 6  | 0  | 2  | 5  | 4  | 2  | 1  | 1  |
| High               | 11             | 3  | 0  | 0  | 5  | 3  | 0  | 0  | 0  |
| Extreme            | 4              | 2  | 0  | 1  | 1  | 0  | 0  | 0  | 0  |
| <u>Form 16a</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 171            | 23 | 29 | 28 | 14 | 19 | 22 | 22 | 14 |
| Moderate           | 19             | 0  | 1  | 5  | 1  | 2  | 3  | 3  | 4  |
| High               | 9              | 1  | 0  | 2  | 0  | 4  | 0  | 0  | 2  |
| Extreme            | 1              | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 16b</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 178            | 23 | 29 | 28 | 15 | 20 | 23 | 22 | 18 |
| Moderate           | 16             | 0  | 1  | 5  | 0  | 3  | 2  | 3  | 2  |
| High               | 5              | 1  | 0  | 2  | 0  | 2  | 0  | 0  | 0  |
| Extreme            | 1              | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 17a</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 166            | 6  | 29 | 31 | 15 | 19 | 25 | 24 | 17 |
| Moderate           | 19             | 6  | 1  | 3  | 0  | 5  | 0  | 1  | 3  |
| High               | 9              | 8  | 0  | 0  | 0  | 1  | 0  | 0  | 0  |
| Extreme            | 6              | 5  | 0  | 1  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 17b</u>    |                |    |    |    |    |    |    |    |    |
| Low                | 178            | 18 | 29 | 32 | 13 | 19 | 24 | 23 | 20 |
| Moderate           | 16             | 5  | 0  | 2  | 1  | 5  | 1  | 2  | 0  |
| High               | 6              | 2  | 1  | 1  | 1  | 1  | 0  | 0  | 0  |
| Extreme            | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

Table 13. (Continued)

| Range <sup>a</sup> | Total | Black vs White |    |    |    |    |    |    |    |
|--------------------|-------|----------------|----|----|----|----|----|----|----|
|                    |       | GS             | AR | WK | PC | AS | MK | MC | EI |
| <u>Form 15a</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 183   | 23             | 29 | 30 | 15 | 22 | 21 | 23 | 20 |
| Moderate           | 13    | 1              | 1  | 3  | 0  | 2  | 4  | 2  | 0  |
| High               | 3     | 1              | 0  | 1  | 0  | 1  | 0  | 0  | 0  |
| Extreme            | 1     | 0              | 0  | 1  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 15b</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 175   | 23             | 27 | 34 | 0  | 24 | 23 | 24 | 20 |
| Moderate           | 6     | 1              | 2  | 0  | 0  | 0  | 2  | 1  | 0  |
| High               | 4     | 1              | 1  | 1  | 0  | 1  | 0  | 0  | 0  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 15c</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 168   | 24             | 30 | 29 | 11 | 22 | 20 | 25 | 7  |
| Moderate           | 22    | 1              | 0  | 4  | 4  | 3  | 4  | 0  | 6  |
| High               | 10    | 0              | 0  | 2  | 0  | 0  | 1  | 0  | 7  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 16a</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 154   | 21             | 26 | 32 | 15 | 0  | 18 | 24 | 18 |
| Moderate           | 17    | 3              | 3  | 3  | 0  | 0  | 6  | 1  | 1  |
| High               | 4     | 1              | 1  | 0  | 0  | 0  | 1  | 0  | 1  |
| Extreme            | 0     | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 16b</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 174   | 22             | 28 | 31 | 13 | 17 | 21 | 24 | 18 |
| Moderate           | 22    | 2              | 2  | 3  | 2  | 7  | 3  | 1  | 2  |
| High               | 3     | 1              | 0  | 0  | 0  | 1  | 1  | 0  | 0  |
| Extreme            | 1     | 0              | 0  | 1  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 17a</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 173   | 16             | 30 | 31 | 13 | 19 | 22 | 23 | 19 |
| Moderate           | 21    | 6              | 0  | 3  | 1  | 5  | 3  | 2  | 1  |
| High               | 4     | 2              | 0  | 1  | 1  | 0  | 0  | 0  | 0  |
| Extreme            | 2     | 1              | 0  | 0  | 0  | 1  | 0  | 0  | 0  |
| <u>Form 17b</u>    |       |                |    |    |    |    |    |    |    |
| Low                | 170   | 23             | 29 | 30 | 0  | 21 | 24 | 23 | 20 |
| Moderate           | 10    | 1              | 1  | 2  | 0  | 3  | 1  | 2  | 0  |
| High               | 3     | 1              | 0  | 2  | 0  | 0  | 0  | 0  | 0  |
| Extreme            | 2     | 0              | 0  | 1  | 0  | 1  | 0  | 0  | 0  |

Table 13. (Concluded)

| Hispanic vs White  |       |    |    |    |    |    |    |    |    |  |
|--------------------|-------|----|----|----|----|----|----|----|----|--|
| Range <sup>a</sup> | Total | GS | AR | WK | PC | AS | MK | MC | EI |  |
| <u>Form 15a</u>    |       |    |    |    |    |    |    |    |    |  |
| Low                | 182   | 22 | 30 | 29 | 15 | 17 | 24 | 25 | 20 |  |
| Moderate           | 13    | 2  | 0  | 3  | 0  | 7  | 1  | 0  | 0  |  |
| High               | 4     | 1  | 0  | 2  | 0  | 1  | 0  | 0  | 0  |  |
| Extreme            | 1     | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 15b</u>    |       |    |    |    |    |    |    |    |    |  |
| Low                | 160   | 20 | 28 | 26 | 0  | 17 | 24 | 25 | 20 |  |
| Moderate           | 16    | 3  | 1  | 4  | 0  | 7  | 1  | 0  | 0  |  |
| High               | 8     | 2  | 1  | 4  | 0  | 1  | 0  | 0  | 0  |  |
| Extreme            | 1     | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 15c</u>    |       |    |    |    |    |    |    |    |    |  |
| Low                | 177   | 24 | 29 | 23 | 14 | 21 | 23 | 24 | 19 |  |
| Moderate           | 14    | 0  | 1  | 5  | 1  | 3  | 2  | 1  | 1  |  |
| High               | 8     | 1  | 0  | 6  | 0  | 1  | 0  | 0  | 0  |  |
| Extreme            | 1     | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 16a</u>    |       |    |    |    |    |    |    |    |    |  |
| Low                | 186   | 22 | 30 | 30 | 14 | 21 | 24 | 25 | 20 |  |
| Moderate           | 12    | 3  | 0  | 4  | 1  | 3  | 1  | 0  | 0  |  |
| High               | 2     | 0  | 0  | 1  | 0  | 1  | 0  | 0  | 0  |  |
| Extreme            | 0     | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 16b</u>    |       |    |    |    |    |    |    |    |    |  |
| Low                | 187   | 22 | 30 | 29 | 15 | 21 | 25 | 25 | 20 |  |
| Moderate           | 9     | 2  | 0  | 4  | 0  | 3  | 0  | 0  | 0  |  |
| High               | 3     | 1  | 0  | 1  | 0  | 1  | 0  | 0  | 0  |  |
| Extreme            | 1     | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  |  |
| <u>Form 17a</u>    |       |    |    |    |    |    |    |    |    |  |
| Low                | 182   | 24 | 30 | 29 | 14 | 18 | 25 | 24 | 18 |  |
| Moderate           | 14    | 0  | 0  | 6  | 1  | 4  | 0  | 1  | 2  |  |
| High               | 2     | 0  | 0  | 0  | 0  | 2  | 0  | 0  | 0  |  |
| Extreme            | 2     | 1  | 0  | 0  | 0  | 1  | 0  | 0  | 0  |  |
| <u>Form 17b</u>    |       |    |    |    |    |    |    |    |    |  |
| Low                | 164   | 23 | 29 | 25 | 0  | 17 | 25 | 25 | 20 |  |
| Moderate           | 14    | 1  | 1  | 7  | 0  | 5  | 0  | 0  | 0  |  |
| High               | 5     | 0  | 0  | 3  | 0  | 2  | 0  | 0  | 0  |  |
| Extreme            | 2     | 1  | 0  | 0  | 0  | 1  | 0  | 0  | 0  |  |

Note. N = 2,000.

<sup>a</sup>Low: MSOS < .01.

Moderate: .01 ≤ MSOS < .02.

High: .02 ≤ MSOS < .04.

Extreme: .04 ≤ MSOS.

**Table 14. Distribution of Mantel-Haenszel Odds Ratio Values by Form and Subgroup Across Subtests**

| Range <sup>a</sup>  | White vs White |    |    |    |    |    |    |    |    |
|---------------------|----------------|----|----|----|----|----|----|----|----|
|                     | Total          | GS | AR | WK | PC | AS | MK | MC | EI |
| <u>Form 15a</u>     |                |    |    |    |    |    |    |    |    |
| Focal > Reference   | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| Approximately Equal | 200            | 25 | 30 | 35 | 15 | 25 | 25 | 25 | 20 |
| Reference > Focal   | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 15b</u>     |                |    |    |    |    |    |    |    |    |
| Focal > Reference   | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| Approximately Equal | 199            | 25 | 30 | 34 | 15 | 25 | 25 | 25 | 20 |
| Reference > Focal   | 1              | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 15c</u>     |                |    |    |    |    |    |    |    |    |
| Focal > Reference   | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| Approximately Equal | 200            | 25 | 30 | 35 | 15 | 25 | 25 | 25 | 20 |
| Reference > Focal   | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 16a</u>     |                |    |    |    |    |    |    |    |    |
| Focal > Reference   | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| Approximately Equal | 200            | 25 | 30 | 35 | 15 | 25 | 25 | 25 | 20 |
| Reference > Focal   | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 16b</u>     |                |    |    |    |    |    |    |    |    |
| Focal > Reference   | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| Approximately Equal | 200            | 25 | 30 | 35 | 15 | 25 | 25 | 25 | 20 |
| Reference > Focal   | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 17a</u>     |                |    |    |    |    |    |    |    |    |
| Focal > Reference   | 1              | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  |
| Approximately Equal | 199            | 25 | 30 | 34 | 15 | 25 | 25 | 25 | 20 |
| Reference > Focal   | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <u>Form 17b</u>     |                |    |    |    |    |    |    |    |    |
| Focal > Reference   | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| Approximately Equal | 200            | 25 | 30 | 35 | 15 | 25 | 25 | 25 | 20 |
| Reference > Focal   | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

Table 14. (Continued)

| Range <sup>a</sup>  | Female vs Male |    |    |    |    |    |    |    |    |
|---------------------|----------------|----|----|----|----|----|----|----|----|
|                     | Total          | GS | AR | WK | PC | AS | MK | MC | EI |
| <u>Form 15a</u>     |                |    |    |    |    |    |    |    |    |
| Focal > Reference   | 21             | 4  | 1  | 4  | 4  | 2  | 2  | 2  | 2  |
| Approximately Equal | 156            | 15 | 29 | 24 | 8  | 20 | 22 | 22 | 16 |
| Reference > Focal   | 23             | 6  | 0  | 7  | 3  | 3  | 1  | 1  | 2  |
| <u>Form 15b</u>     |                |    |    |    |    |    |    |    |    |
| Focal > Reference   | 19             | 5  | 0  | 5  | 2  | 4  | 0  | 1  | 2  |
| Approximately Equal | 160            | 15 | 28 | 25 | 12 | 18 | 24 | 23 | 15 |
| Reference > Focal   | 21             | 5  | 2  | 5  | 1  | 3  | 1  | 1  | 3  |
| <u>Form 15c</u>     |                |    |    |    |    |    |    |    |    |
| Focal > Reference   | 19             | 5  | 1  | 7  | 1  | 3  | 1  | 0  | 1  |
| Approximately Equal | 155            | 11 | 28 | 23 | 13 | 18 | 22 | 24 | 16 |
| Reference > Focal   | 26             | 9  | 1  | 5  | 1  | 4  | 2  | 1  | 3  |
| <u>Form 16a</u>     |                |    |    |    |    |    |    |    |    |
| Focal > Reference   | 21             | 5  | 1  | 7  | 0  | 3  | 3  | 1  | 1  |
| Approximately Equal | 157            | 14 | 27 | 23 | 14 | 20 | 19 | 22 | 18 |
| Reference > Focal   | 22             | 6  | 2  | 5  | 1  | 2  | 3  | 2  | 1  |
| <u>Form 16b</u>     |                |    |    |    |    |    |    |    |    |
| Focal > Reference   | 22             | 4  | 4  | 6  | 2  | 2  | 3  | 1  | 0  |
| Approximately Equal | 165            | 19 | 25 | 26 | 13 | 20 | 21 | 22 | 19 |
| Reference > Focal   | 13             | 2  | 1  | 3  | 0  | 3  | 1  | 2  | 1  |
| <u>Form 17a</u>     |                |    |    |    |    |    |    |    |    |
| Focal > Reference   | 13             | 3  | 0  | 5  | 0  | 1  | 1  | 0  | 3  |
| Approximately Equal | 176            | 18 | 29 | 25 | 15 | 23 | 24 | 25 | 17 |
| Reference > Focal   | 11             | 4  | 1  | 5  | 0  | 1  | 0  | 0  | 0  |
| <u>Form 17b</u>     |                |    |    |    |    |    |    |    |    |
| Focal > Reference   | 16             | 4  | 0  | 5  | 2  | 1  | 1  | 1  | 2  |
| Approximately Equal | 165            | 16 | 29 | 22 | 11 | 23 | 22 | 24 | 18 |
| Reference > Focal   | 19             | 5  | 1  | 8  | 2  | 1  | 2  | 0  | 0  |

Table 14. (Continued)

| Range <sup>a</sup>  | Black vs White |    |    |    |    |    |    |    |    |
|---------------------|----------------|----|----|----|----|----|----|----|----|
|                     | Total          | GS | AR | WK | PC | AS | MK | MC | EI |
| <u>Form 15a</u>     |                |    |    |    |    |    |    |    |    |
| Focal > Reference   | 10             | 1  | 0  | 5  | 0  | 1  | 2  | 1  | 0  |
| Approximately Equal | 174            | 23 | 28 | 23 | 14 | 22 | 22 | 22 | 20 |
| Reference > Focal   | 16             | 1  | 2  | 7  | 1  | 2  | 1  | 2  | 0  |
| <u>Form 15b</u>     |                |    |    |    |    |    |    |    |    |
| Focal > Reference   | 14             | 1  | 4  | 4  | 2  | 0  | 2  | 0  | 1  |
| Approximately Equal | 166            | 22 | 24 | 24 | 11 | 23 | 20 | 23 | 19 |
| Reference > Focal   | 20             | 2  | 2  | 7  | 2  | 2  | 3  | 2  | 0  |
| <u>Form 15c</u>     |                |    |    |    |    |    |    |    |    |
| Focal > Reference   | 12             | 2  | 0  | 6  | 2  | 1  | 1  | 0  | 0  |
| Approximately Equal | 169            | 18 | 29 | 23 | 11 | 23 | 20 | 25 | 20 |
| Reference > Focal   | 19             | 5  | 1  | 6  | 2  | 1  | 4  | 0  | 0  |
| <u>Form 16a</u>     |                |    |    |    |    |    |    |    |    |
| Focal > Reference   | 19             | 4  | 3  | 4  | 1  | 2  | 3  | 1  | 1  |
| Approximately Equal | 161            | 18 | 25 | 26 | 12 | 21 | 19 | 24 | 16 |
| Reference > Focal   | 20             | 3  | 2  | 5  | 2  | 2  | 3  | 0  | 3  |
| <u>Form 16b</u>     |                |    |    |    |    |    |    |    |    |
| Focal > Reference   | 15             | 2  | 2  | 3  | 2  | 3  | 2  | 0  | 1  |
| Approximately Equal | 170            | 20 | 27 | 29 | 12 | 19 | 21 | 25 | 17 |
| Reference > Focal   | 15             | 3  | 1  | 3  | 1  | 3  | 2  | 0  | 2  |
| <u>Form 17a</u>     |                |    |    |    |    |    |    |    |    |
| Focal > Reference   | 13             | 1  | 1  | 5  | 3  | 2  | 1  | 0  | 0  |
| Approximately Equal | 174            | 21 | 29 | 24 | 12 | 21 | 23 | 25 | 19 |
| Reference > Focal   | 13             | 3  | 0  | 6  | 0  | 2  | 1  | 0  | 1  |
| <u>Form 17b</u>     |                |    |    |    |    |    |    |    |    |
| Focal > Reference   | 14             | 2  | 1  | 5  | 2  | 2  | 1  | 0  | 1  |
| Approximately Equal | 175            | 20 | 29 | 26 | 12 | 21 | 24 | 24 | 19 |
| Reference > Focal   | 11             | 3  | 0  | 4  | 1  | 2  | 0  | 1  | 0  |

Table 14. (Concluded)

| Range <sup>a</sup>  | Hispanic vs White |    |    |    |    |    |    |    |    |
|---------------------|-------------------|----|----|----|----|----|----|----|----|
|                     | Total             | GS | AR | WK | PC | AS | MK | MC | EI |
| <u>Form 15a</u>     |                   |    |    |    |    |    |    |    |    |
| Focal > Reference   | 11                | 2  | 0  | 5  | 1  | 3  | 0  | 0  | 0  |
| Approximately Equal | 173               | 20 | 30 | 23 | 13 | 18 | 24 | 25 | 20 |
| Reference > Focal   | 16                | 3  | 0  | 7  | 1  | 4  | 1  | 0  | 0  |
| <u>Form 15b</u>     |                   |    |    |    |    |    |    |    |    |
| Focal > Reference   | 17                | 4  | 0  | 6  | 2  | 4  | 1  | 0  | 0  |
| Approximately Equal | 157               | 17 | 27 | 18 | 11 | 17 | 23 | 25 | 19 |
| Reference > Focal   | 26                | 4  | 3  | 11 | 2  | 4  | 1  | 0  | 1  |
| <u>Form 15c</u>     |                   |    |    |    |    |    |    |    |    |
| Focal > Reference   | 14                | 0  | 0  | 9  | 1  | 2  | 1  | 0  | 1  |
| Approximately Equal | 168               | 21 | 29 | 19 | 13 | 21 | 22 | 24 | 19 |
| Reference > Focal   | 18                | 4  | 1  | 7  | 1  | 2  | 2  | 1  | 0  |
| <u>Form 16a</u>     |                   |    |    |    |    |    |    |    |    |
| Focal > Reference   | 12                | 2  | 0  | 7  | 0  | 3  | 0  | 0  | 0  |
| Approximately Equal | 169               | 19 | 30 | 19 | 14 | 20 | 24 | 25 | 18 |
| Reference > Focal   | 19                | 4  | 0  | 9  | 1  | 2  | 1  | 0  | 2  |
| <u>Form 16b</u>     |                   |    |    |    |    |    |    |    |    |
| Focal > Reference   | 9                 | 2  | 0  | 5  | 0  | 2  | 0  | 0  | 0  |
| Approximately Equal | 177               | 20 | 30 | 23 | 14 | 23 | 24 | 25 | 18 |
| Reference > Focal   | 14                | 3  | 0  | 7  | 1  | 0  | 1  | 0  | 2  |
| <u>Form 17a</u>     |                   |    |    |    |    |    |    |    |    |
| Focal > Reference   | 9                 | 1  | 0  | 4  | 1  | 3  | 0  | 0  | 0  |
| Approximately Equal | 176               | 22 | 30 | 26 | 14 | 17 | 25 | 24 | 18 |
| Reference > Focal   | 15                | 2  | 0  | 5  | 0  | 5  | 0  | 1  | 2  |
| <u>Form 17b</u>     |                   |    |    |    |    |    |    |    |    |
| Focal > Reference   | 18                | 2  | 2  | 9  | 1  | 4  | 0  | 0  | 0  |
| Approximately Equal | 162               | 20 | 27 | 17 | 14 | 17 | 24 | 24 | 19 |
| Reference > Focal   | 20                | 3  | 1  | 9  | 0  | 4  | 1  | 1  | 1  |

Note. N = 2,000.

<sup>a</sup>Focal > Reference: MHODDS < .6534.

Approximately Equal: .6534 ≤ MHODDS < 1.5304.

Reference > Focal: 1.5304 ≤ MHODDS.

To visualize the effects of sample size on the order of magnitude of each of the indices, the calculated values of each of the indices were plotted for all the subtests and all five indices on Form 15a. Since the distribution of each of the indices was similar across all forms, selected plots were identified for inclusion in this report. These plots for Form 15a are shown in Figures 2 through 10. These results show the phenomenon mentioned earlier regarding the increasing means and standard deviations of the Chi-Square measures as a function of sample size. The plots in Figures 2 through 4 show the origin of this effect at the item level. The reader will notice that for the three Chi-Square indices, FCHI5, MHCHI, and LCHI, the magnitude of these indices increases as the sample size increases for a given item that is indicated as having DIF. This increase can be viewed as showing the increasing power of the Chi-Square indices to detect differences in item functioning--regardless of whether the indices are based on the more traditional item statistics (FCHI5), conditional relationships to total test score (MHCHI), or IRT (LCHI).

As indicated by examination of the other plots of the three Chi-Square indices, the increase in absolute value of the Chi-Square indices appears to be a function strictly of sample size, since the effect is present across the three comparison groups. The magnitude of the effects is different for each of the three indices, but is consistent with respect to direction. Figure 2 indicates that for the FCHI5, there were many missing values for the N = 100 sample size since too many cells failed to meet the minimum expected frequency of five cases in each of the five score groups.

The MHODDS is treated separately because it is the only directional index of the five examined. Figure 5 shows the variability of the MHODDS as a function of sample size. The two horizontal lines in Figure 5 correspond to MHODDS values of .6534 and 1.5304--values of one in the Delta Difference metric indicates practical significance.

The variability of the MHODDS for the N = 100 sample size can be seen in Figure 5 for the White-White baseline comparison group. For the three sample sizes greater than 100, the MHODDS appears to vary consistently around an MHODDS value of one, indicating, as expected in a White-White group comparison, no DIF. The MHODDS values occasionally exceed those values which indicate practical significance for the N = 100 sample. This inconsistency of the MHODDS in the N = 100 sample is noted across all power subtests, and across all forms.

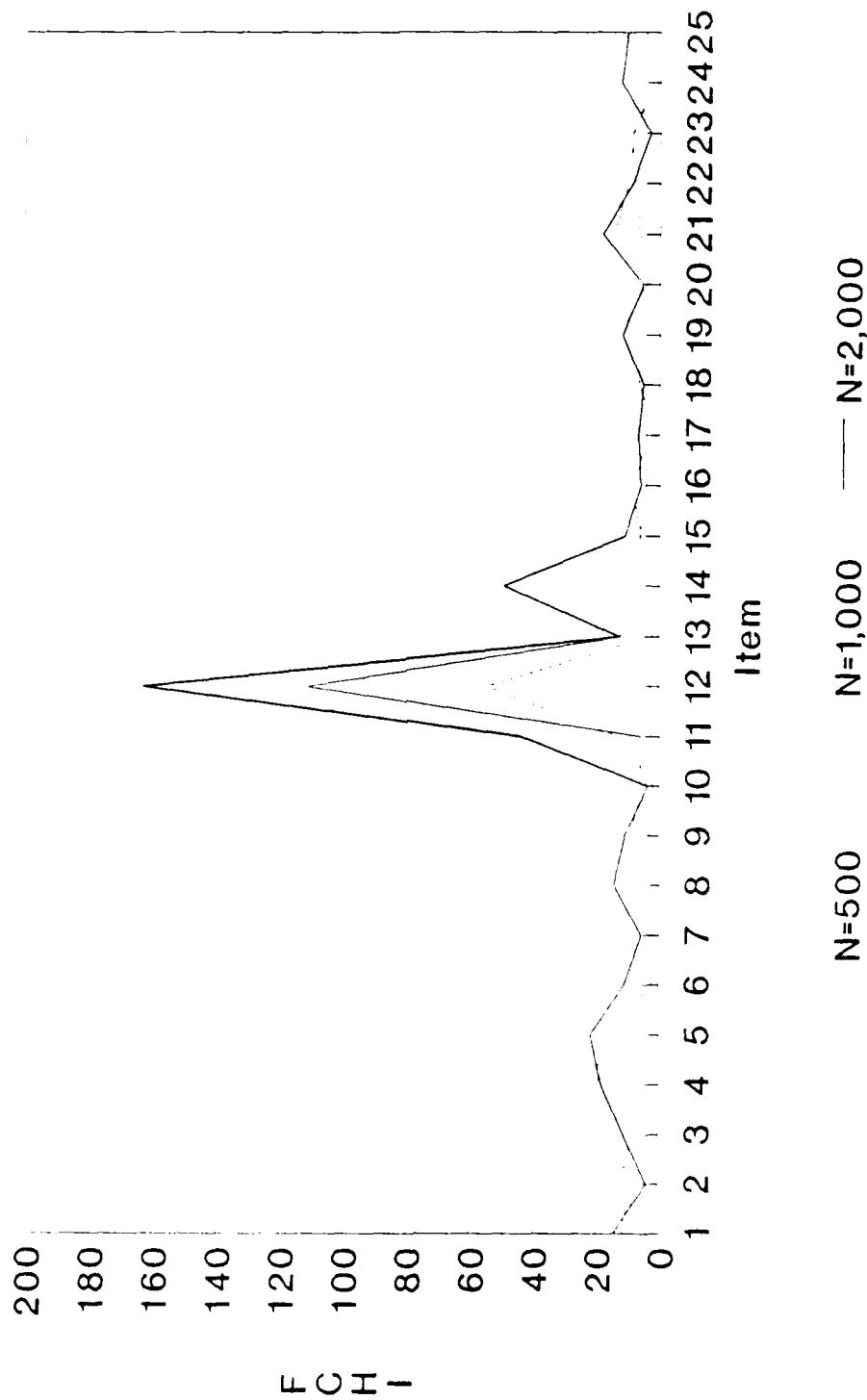


Figure 2. Form 15a, GS, Black vs White

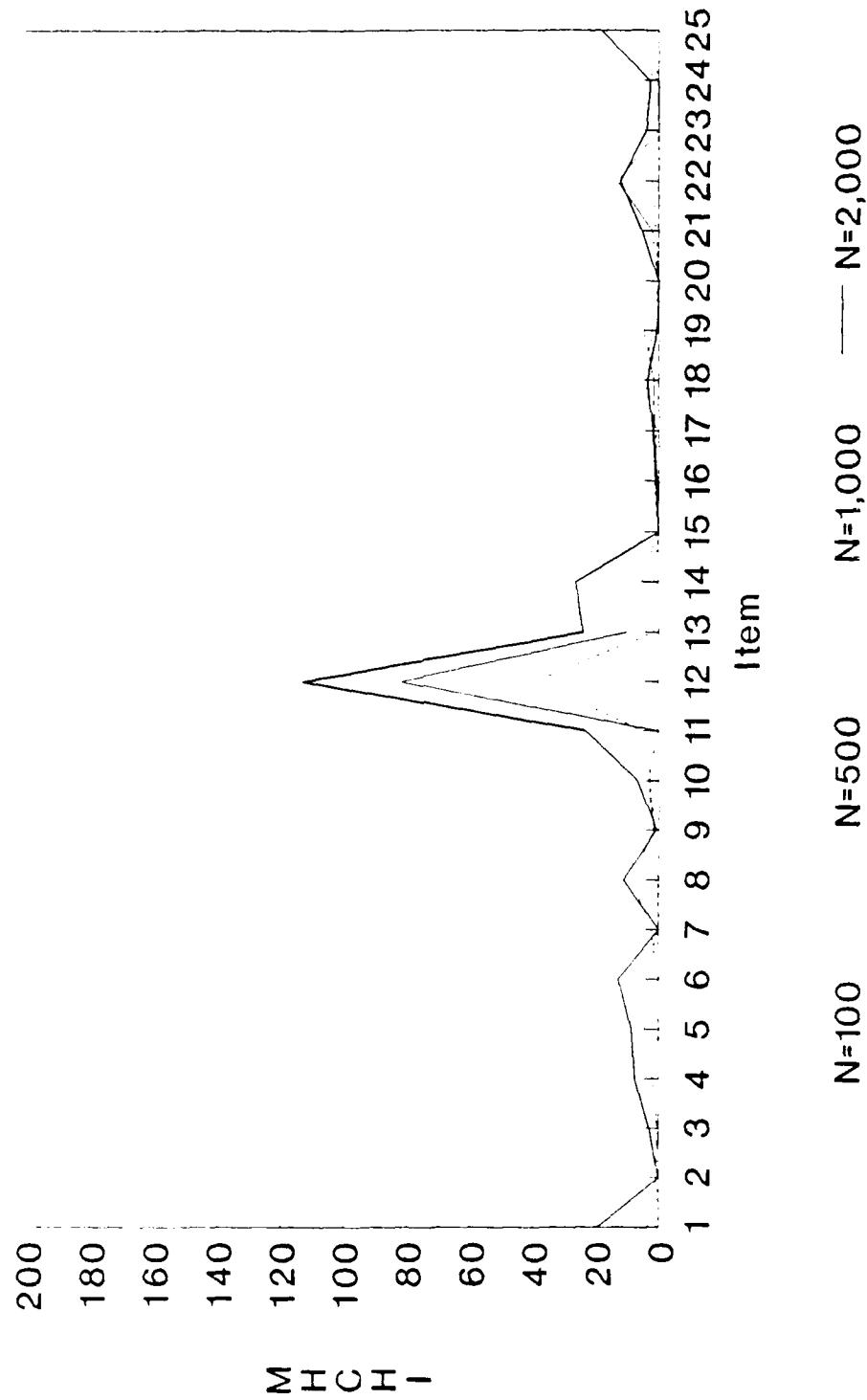


Figure 3. Form 15a, GS, Black vs White

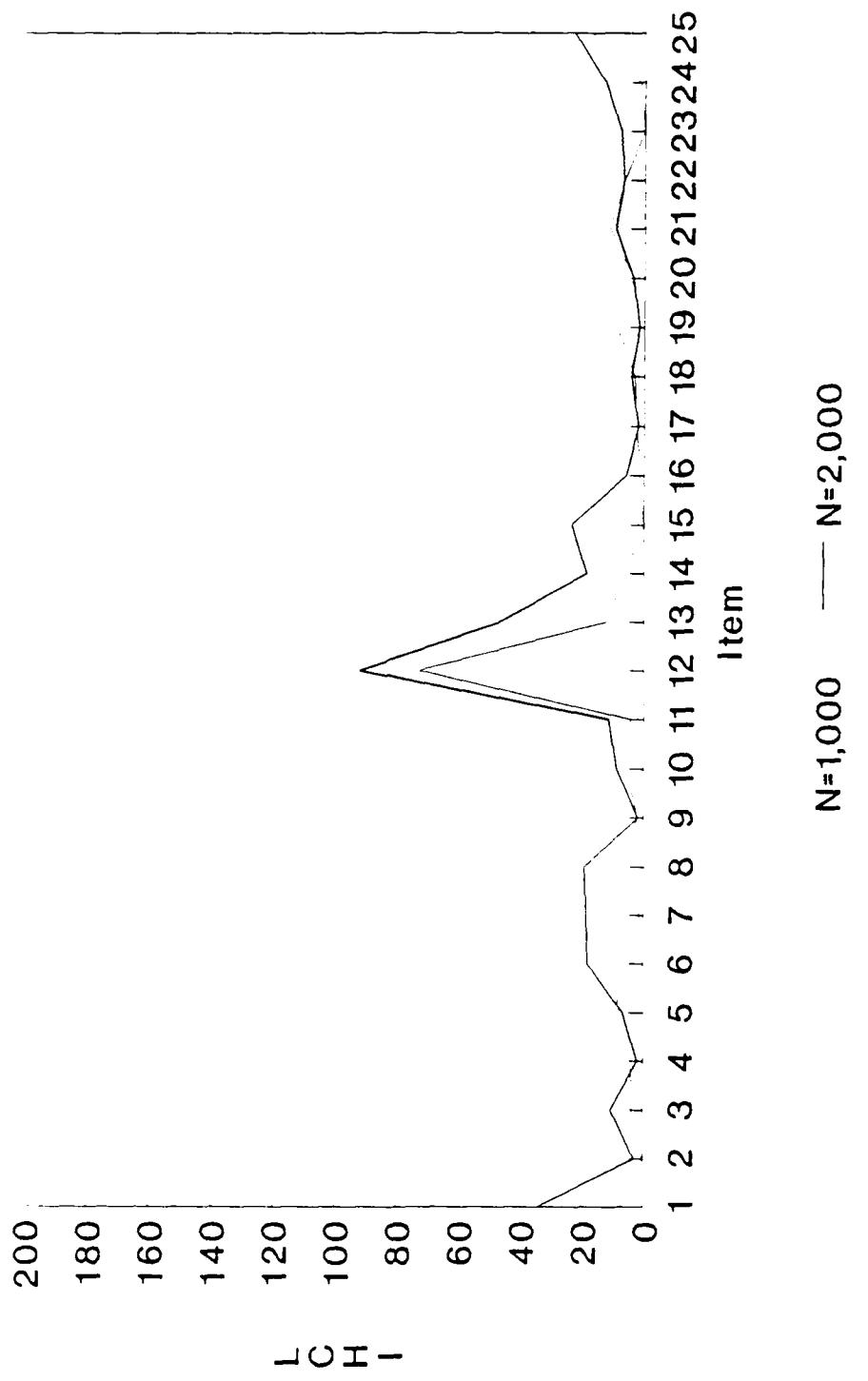


Figure 4. Form 15a, GS, Black vs White

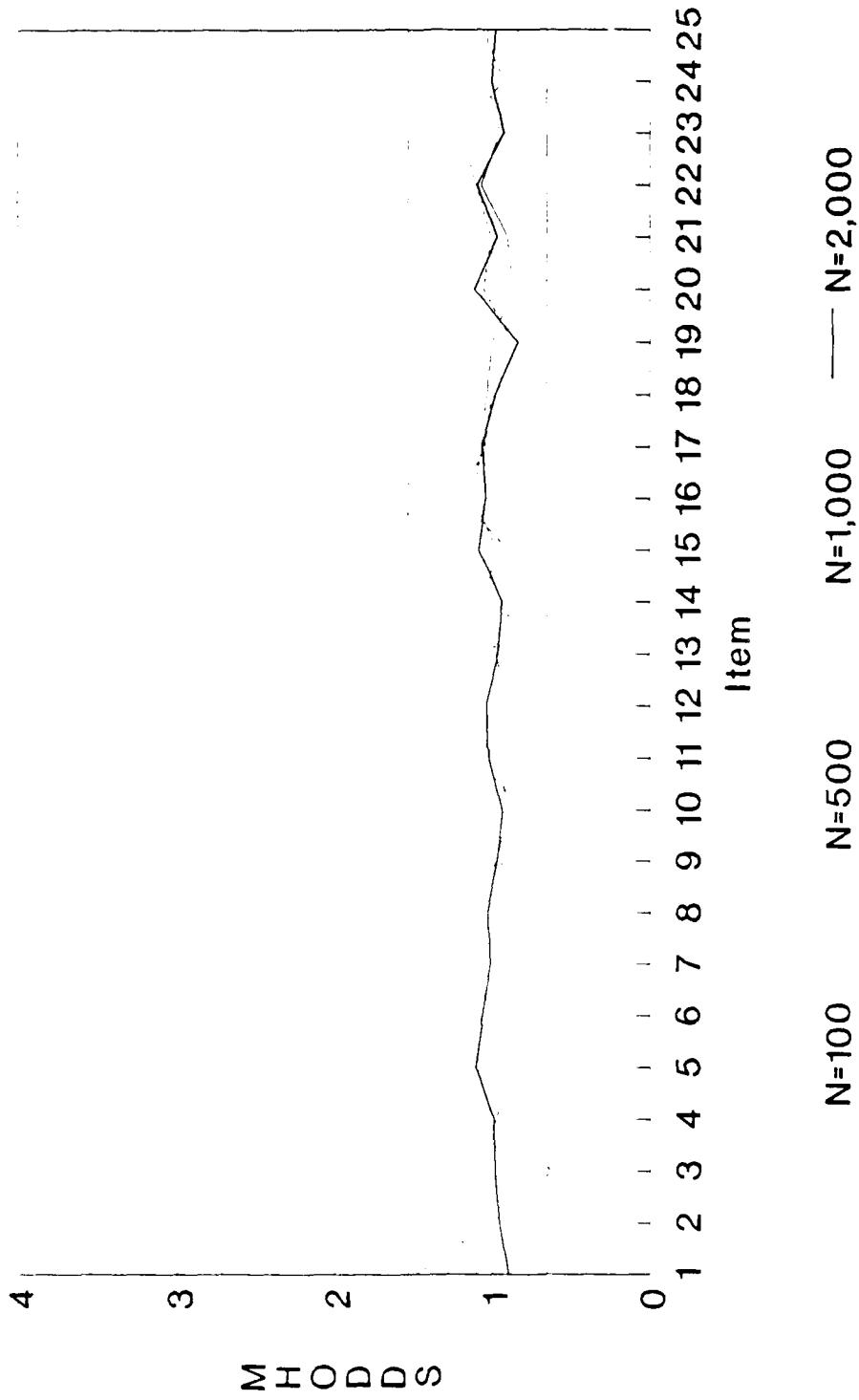


Figure 5. Form 15a, GS, White vs White

Figure 6 presents the sample size comparison for the White-Black comparison group for the MHODDS as a function of sample size. Here, for the same test items, the MHODDS shows the same inconsistencies for the smallest sample size ( $N = 100$ ), while showing slightly better consistency for the three larger sample sizes. This phenomenon is consistent with the results indicated in Table 15, which show that the correlation of the traditional (FCHI5) and conditional indexes (MHCHI and MHODDS) drops as a function of the sample size. The three correlation matrices presented in Table 15 represent the correlation of a given index in one of the four random sample sizes with the same index values computed on the 200 power subtest items, across the seven forms and the four comparison groups ( $N = 5,600$ ). The  $N = 1,114$  for the FCHI5 is a result of the pairwise deletion of values that could not be computed for the FCHI5. The intercorrelations of the three indices presented in Table 15 are high for the larger sample sizes, and all show a dramatic drop for the  $N = 100$  sample size.

Figures 7 and 8 show the plots of the MSOS values for the GS subtest from ASVAB Form 15a for two sample sizes (since the MSOS is an IRT-based index and was computed only for the  $N = 1,000$  and  $N = 2,000$  samples). Figure 7 shows that all MSOS values were all extremely small for the White-White comparison group, with slightly more variability for the  $N = 1,000$  group. The same MSOS values for the same items in the White-Black comparison group are presented in Figure 8, with a change in vertical scale range. For both Figures 7 and 8, the vertical axis represents the MSOS values multiplied by 1,000. These two figures show that the MSOS is reasonably consistent across the two sample sizes. The MSOS index indicated the same item (Number 12) as having DIF. This item was consistently identified as functioning differently by all the indices. Figure 8 shows that the MSOS value for the  $N = 1,000$  sample size for item No. 12 was larger than that for the  $N = 2,000$  value, but both MSOS values were larger than the .02 value taken as the arbitrary indication of significant DIF for the MSOS index. However, the MSOS values, when computed across forms and subtests, are generally consistent between samples.

#### DIF Within ASVAB Forms 15, 16 and 17

The results of the analysis of DIF within ASVAB Forms 15, 16 and 17 are presented below. An item was considered as functioning differentially for the comparison groups if all five of the DIF indices indicated significant DIF. For the two indices with no statistical test of

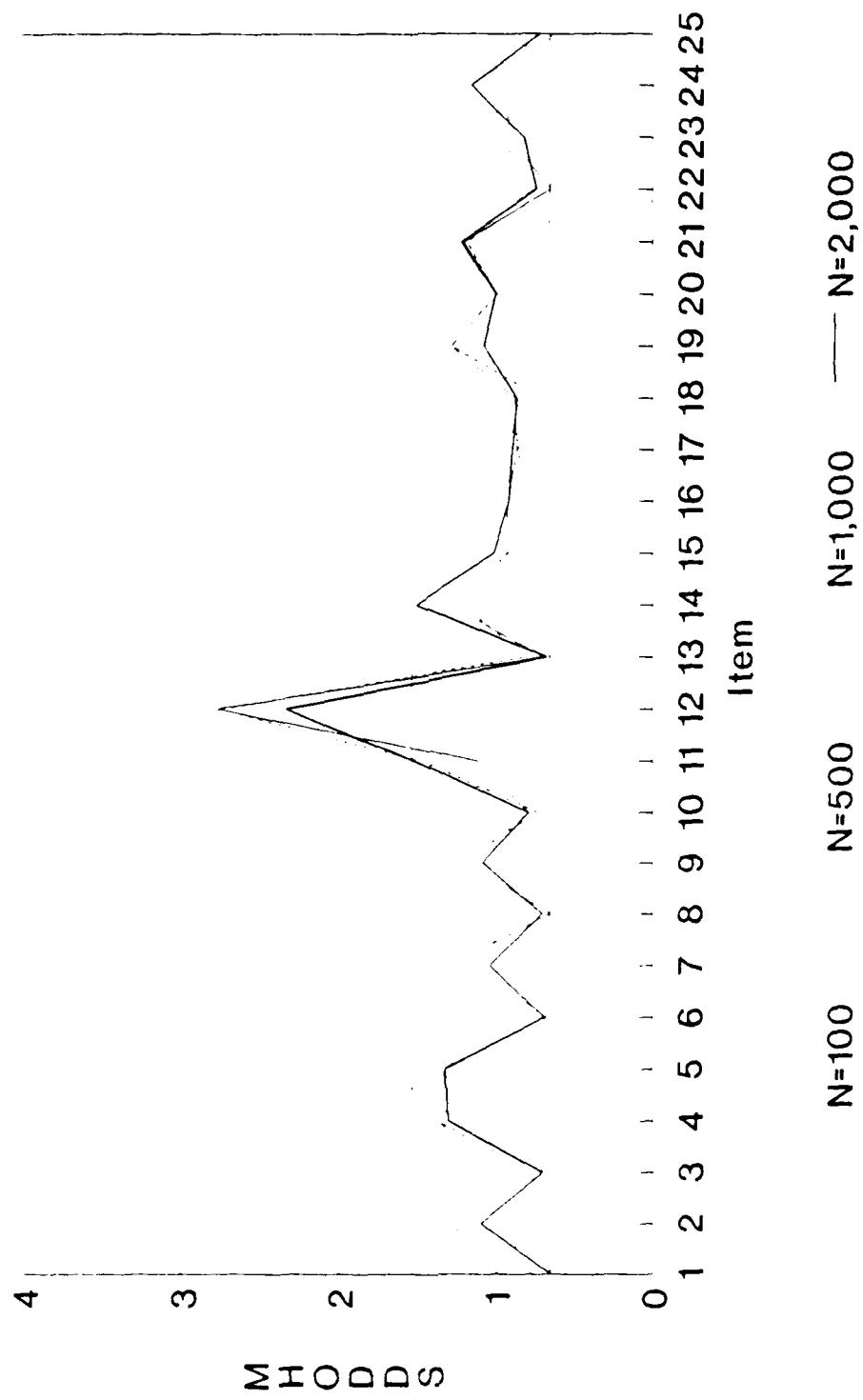
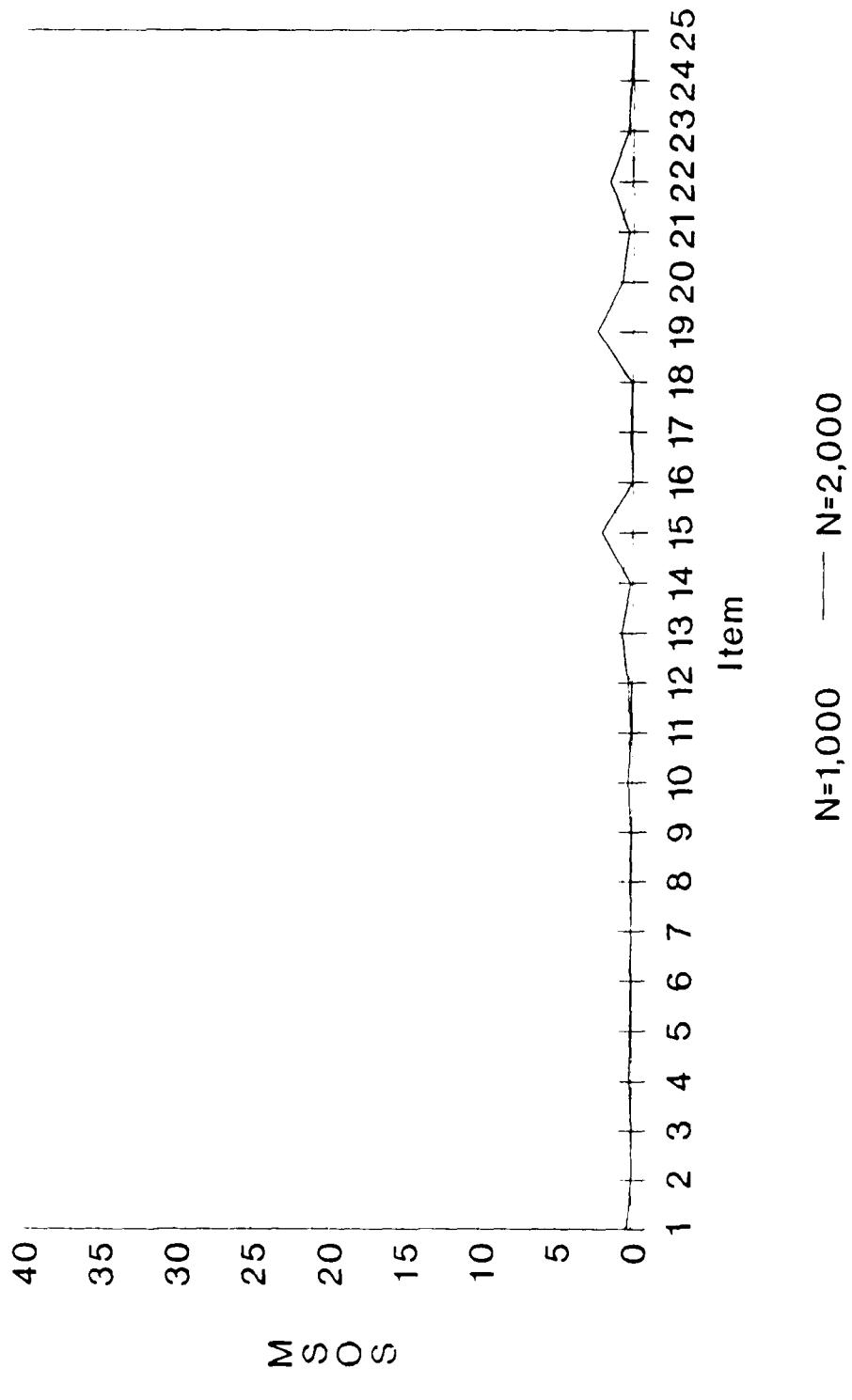
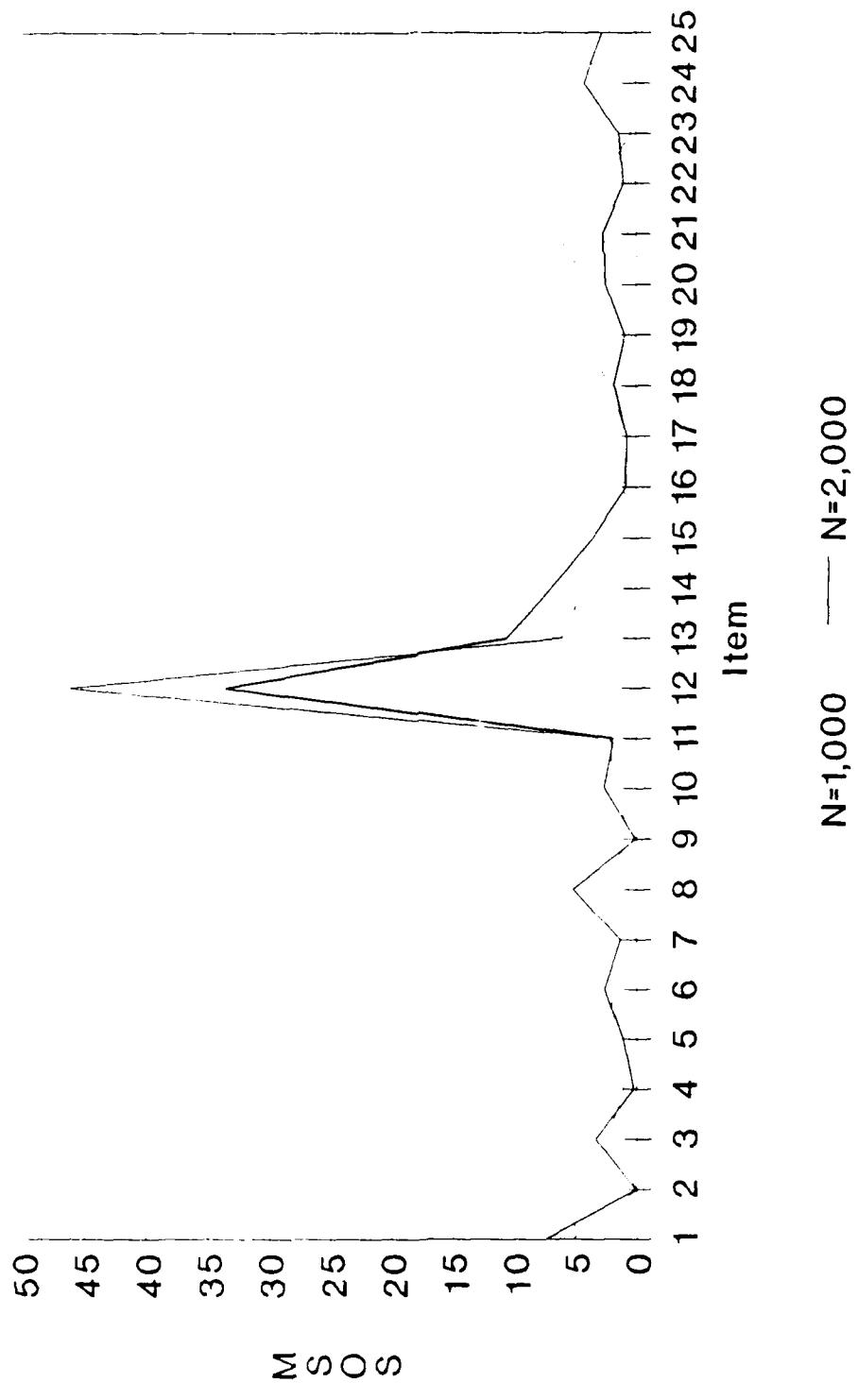


Figure 6. Form 15a, GS, Black vs White



Note.  $MSE \times 0.001$

**Figure 7.** Form 15a, GS, White vs White



Note: Msos  $\times 0.001$

**Figure 8.** Form 15a, GS, Black vs White

Table 15. Correlations of Three DIF Indices as a Function of Sample Size

| N                                 | Sample Size |          |           |           |
|-----------------------------------|-------------|----------|-----------|-----------|
|                                   | 1<br>100    | 2<br>500 | 3<br>1000 | 4<br>2000 |
| <u>Full Chi-Square</u>            |             |          |           |           |
| 1                                 |             | .30      | .32       | .35       |
| 2                                 |             |          | .76       | .81       |
| 3                                 |             |          |           | .91       |
| 4                                 |             |          |           |           |
| <u>Mantel-Haenszel Chi-Square</u> |             |          |           |           |
| 1                                 |             | .35      | .38       | .38       |
| 2                                 |             |          | .81       | .79       |
| 3                                 |             |          |           | .86       |
| 4                                 |             |          |           |           |
| <u>Mantel-Haenszel Odds Ratio</u> |             |          |           |           |
| 1                                 |             | .34      | .35       | .36       |
| 2                                 |             |          | .77       | .80       |
| 3                                 |             |          |           | .89       |
| 4                                 |             |          |           |           |

significance--the MHODDS and the MSOS--values were chosen for flagging items that indicated practical significance. These values for the MHODDS and MSOS were taken from Linn et al. (1988). For the MHODDS, an item was flagged if the computed value on the index exceeded 1.5304 or was less than .6534. Items with MSOS values greater than .02 were flagged. The subtest by subtest results are presented in terms of the number of items flagged by all five indices on a given subtest, across all seven forms, and by taxonomic areas. Because these forms of the ASVAB are currently operational, none of the items were discussed in specific detail. Items were discussed only in terms of their general taxonomic classification.

General Science. There was some variability across forms in the number of items flagged by all five indices. Form 17a had nine items flagged, while Form 16a only had one item flagged. In general terms, if an item exhibited DIF on one version, it exhibited DIF on the sister version of GS. The DIF, with some exceptions, was in favor of the reference group and generally occurred for items in the physical and earth science taxonomic areas. The

occurrence of DIF across the White-Black and White-Hispanic comparison groups was evenly distributed. There was only one, occasionally two, items flagged and these were evenly balanced between the two comparison groups. This was not the case for the gender-group comparisons, however.

Forms 15a, 15b, and 17a had 3, 3, and 4 items flagged, respectively, with gender DIF. These were items in taxonomic areas dealing with physical and earth sciences. These items were not necessarily balanced with the same number of items favoring the focal-group.

Item 12, shown in Figures 5 through 8 as consistently showing DIF across all comparison groups, illustrates a problem with the use of any DIF index, or combination of indexes. Examination of the item content provides no clue as to differential functioning related to ethnicity or gender. The item is a physical science-type item related to expansion and contraction of solids, and has no person or group related references in the stem or the distractors. The identified differential functioning may be related to rural-urban differences, but this is pure speculation. If DIF for a given item cannot be identified with some obvious type of content, or some reason for the gender or ethnicity bias identified, it is most likely that the item is measuring what it was intended to measure. When faced with this type of dilemma, a prudent course is to follow the advice of Hills (1989), "If you cannot verify that the difference in performance between groups is due to a factor irrelevant to what is being measured, the item cannot be regarded as biased" (p. 7).

Arithmetic Reasoning. This subtest had very few DIF items indicated from the results. No items exhibited DIF on 15a, 16b, and 17a, and there was only one item identified each on Forms 15b, 16a, and 17b. Of the three items with DIF out of the 210 unique AR items, one was in favor of the Black focal group and one in favor of the White reference group in the White-Black comparison. One item favoring males in the male-female comparison was found on 17b.

Word Knowledge. The occurrence of DIF items on WK was sparse and unsystematic, both across the three comparison groups and across forms. There were as many as five items flagged on Form 15b for the White-Hispanic comparison group, but three of these favored the Hispanic focal group and two favored the White reference group. The items favoring the focal group were of the "most nearly means" stem format and tended to be verbs or adjectives. Of the remaining forms, the occurrence of DIF was evenly divided between the ethnic and gender groups, and almost always balanced in terms of the direction of DIF for the focal and reference groups. Other than Form 15b, there were never more than two DIF items in either ethnic or gender comparisons for any of the forms.

Paragraph Comprehension. The Paragraph Comprehension subtest had only one item that met the study criteria for DIF out of a total of 105 items across all seven forms of the ASVAB. The single item favored the female focal group on Form 15a and was in the recall of textual-detail taxonomic-category.

Auto and Shop Information. The occurrence of DIF items on this subtest across forms ranged from three items on Forms 16a, 17a and 17b for the male-female comparison groups and the White-Hispanic comparison group; to no DIF for the White-Black comparison groups on 15a, 15b, 16a, and male-female comparison group for 17b. The most noteworthy comment about the AS subtest is about the DIF that was not observed. AS in Forms 15a, 15b, 17a and 17b showed no DIF for the male-female comparison group. On Forms 16a there were three items showing DIF. Two of the items showed DIF in favor of the male reference group, and one item favored the female reference group. One of the two male-favoring items were in the Auto/Engine taxonomic category, the other in the Shop/Tools category. Only one of the two reference group or Male DIF items also showed DIF on the sister version of the subtest (Form 16b). The female-favoring item on Form 16a did not show corresponding DIF on the 16b version of the battery. The one consistent DIF item was in the Shop/Tools Category.

Mathematics Knowledge. Of the 75 unique items in the MK subtest, only one showed DIF across all three ethnic and gender comparison groups. The item, from 16a-16b, was in the analytic geometry taxonomic category.

Mechanical Comprehension. No items on MC for any of the forms met the criteria established for DIF. As with AS, it is noteworthy that none of the items showed gender differences.

Electronics Information. Seven of the 75 unique EI items displayed DIF. Six of these items were in the male-female comparison group and were balanced in direction on Forms 15a, 15b, and 16a. One item on each of these three forms favored males and one item favored females. There were no DIF items on either version of Form 17. Only one item was flagged as DIF for the White-Black comparison group. Those items indicating DIF for the male reference group were from the tools/power supply taxonomic-category, while those favoring females were all from the theory taxonomic category. None of the seven DIF items replicated the DIF on a sister version of the subtest.

#### IV. DISCUSSION AND CONCLUSIONS

Three DIF indices based on traditional item statistics and conditional item-to-total-score relationships and two DIF indices based on IRT item analysis were computed for each of the 200 power subtest items on each of seven ASVAB Forms 15 a/b/c, 16a/b, and 17a/b. The five DIF indices were computed in four White-White baseline comparison samples of  $N = 100$ ,  $N = 500$ ,  $N = 1,000$ , and  $N = 2,000$  for the Mantel-Haenszel Chi-Square, Mantel-Haenszel Odds Ratio, and Camilli's Full Chi-Square; and in two random samples of  $N = 1,000$  and  $N = 2,000$  for the Modified Sum of Squares and the Lord's Chi-Square indices. Also, all five indices were computed, in random samples of corresponding size, for White-Black, White-Hispanic, and male-female comparison groups.

The purposes of the study were to examine the power items on the ASVAB Forms 15, 16, and 17 for DIF and to examine the effect of sample size on the five DIF indices. Both purposes were served by the use of White-White baseline comparisons for each of four random samples for the MCHI, Camilli's FCHI, and MHODDS ratio; and two White-White random samples for the IRT indices--the LCHI and the MSOS. Baseline results were used to compare the magnitude of the values of all five indices. The use of baseline values has been typically used to compare results where no statistical tests of significance are available--such as the case for the MHODD ratio and the MSOS used in this study (Ironson & Subkoviak, 1979; Rudner, Getson, & Knight, 1980; Shepard, Camilli, & Williams, 1984).

However, as Hills (1989) noted, when sample sizes are large, tests of statistical significance are not very useful, since minor differences due to unidentifiable and irrelevant causes between focal and reference groups often result in statistically significant DIF. For this reason, distributions of all the DIF indices in this study were examined in baseline comparison groups to evaluate the magnitude of index values obtained in focal group comparisons on ASVAB Forms 15, 16, and 17, and to evaluate the effect of sample size on the DIF indices.

To evaluate the occurrence of DIF on the ASVAB, an item was flagged if DIF was indicated on all five indices. In effect, all other indices were used to judge the practical significance of DIF indicated with a given index. The distributional information of the five indices, and the rules of thumb used by Linn et al. (1988), provided general orders of magnitude for low, moderate, high, and extreme DIF. The results of this study indicated that the power subtest items on the ASVAB Forms 15, 16, and 17 were relatively free of DIF.

Items that were found to indicate practically significant DIF did not always have an identifiable cause that was irrelevant to the measured trait. As Hills (1989) has warned, if one can not find an identifiable, irrelevant cause for DIF on an item, the item is best considered as measuring true between group differences.

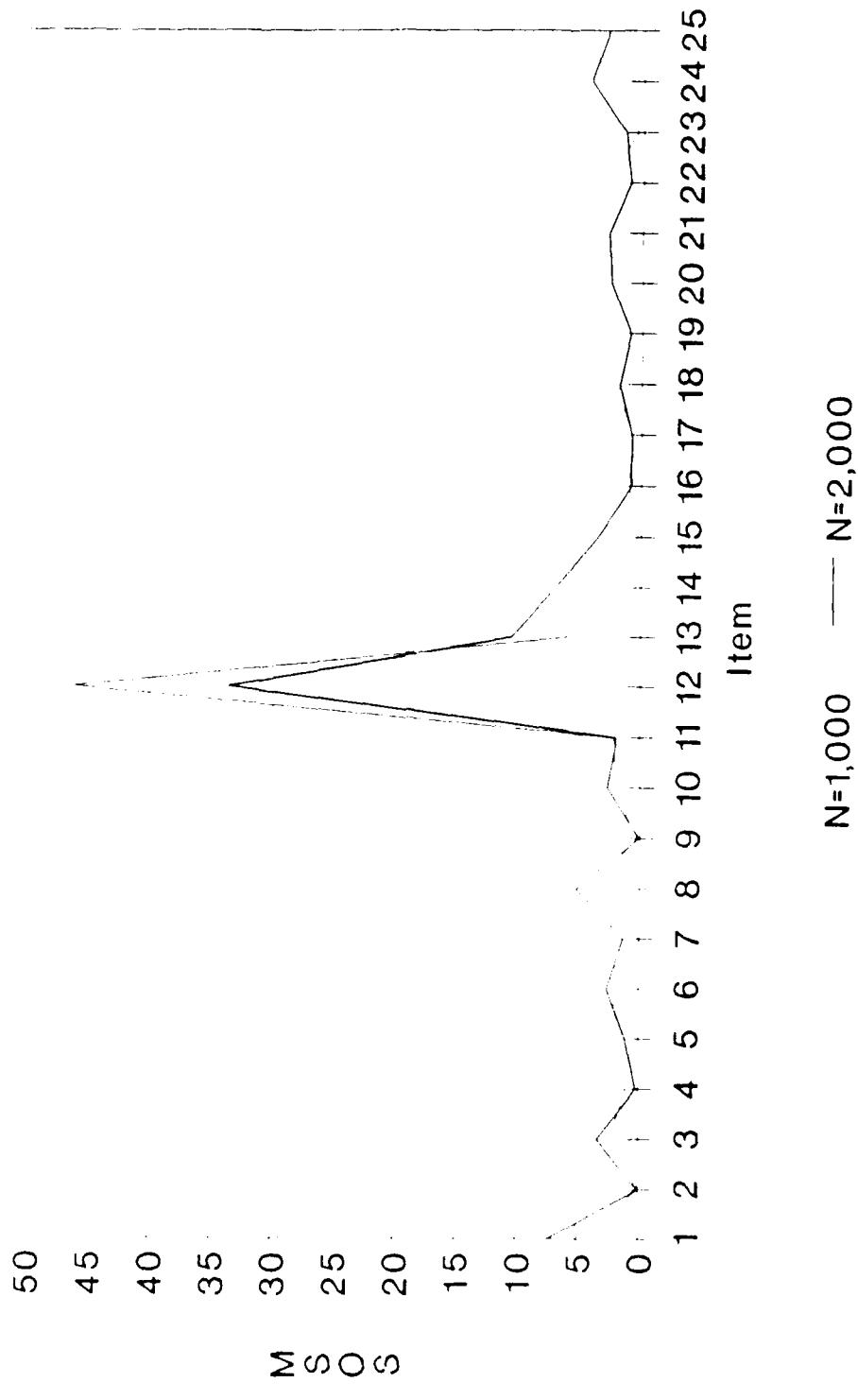
After elimination of those items for which no identifiable factors irrelevant to the ability being measured could be found, the occurrence of DIF on ASVAB Forms 15, 16, and 17 was infrequent. Items on the GS subtest with DIF generally favored the White or male reference groups, with gender differences in favor of male reference groups predominantly in the earth and physical sciences. This result is consistent with the findings of Linn et al. (1988). The lack of DIF on the AR and MK subtests is also consistent with previous research on DIF in the ASVAB (Linn et al., 1988).

The lack of occurrence of gender-related DIF on the MC and EI subtests is in contrast to the results reported by Linn et al. (1988). Only 7 of the 140 EI items for example, were slightly easier for males. This was not a significant effect.

There are two possible reasons for the relative lack of DIF on the EI subtests in this study and that found by Linn et al. (1988) for the EI subtest on Form 14. The first and most obvious is that the EI and MC subtests in the present study are different from the EI and MC in the Linn et al. (1988) effort. It is possible that ASVAB Forms 15, 16, and 17 Electronics Information and Mechanical Comprehension subtests rely less on the specialized vocabulary found in shop and math texts that Linn et al. attributed to DIF in the case of ASVAB Form 14.

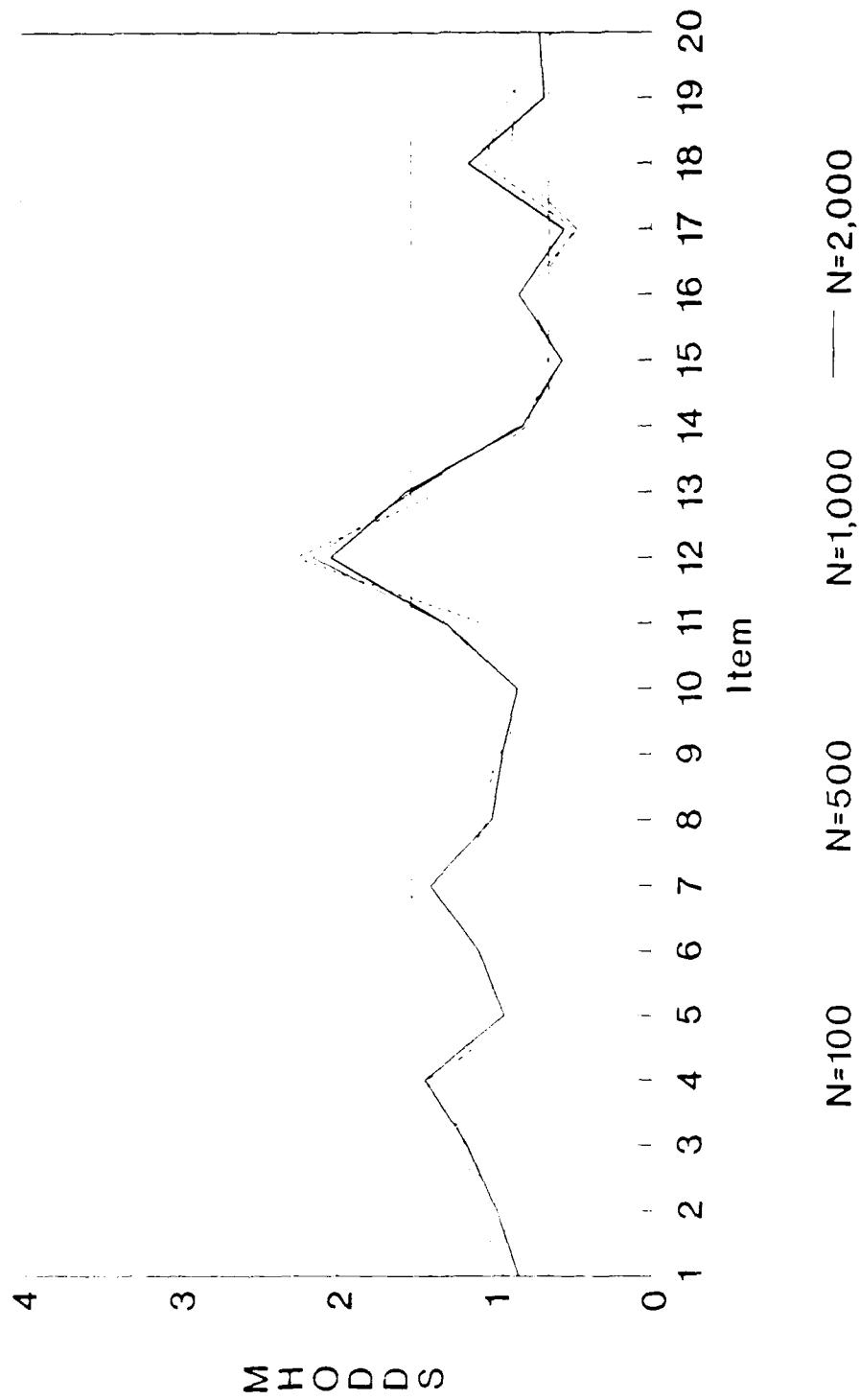
The second reason for the difference in results between the present study and the Linn et al. (1988) research is also important. The criteria used in this study to flag a DIF item could be considered as much more stringent. Linn et al. (1988) used the occurrence of DIF on two indices for interpretive purposes--the MHODDS ratio and the MSOS. An item was flagged as DIF in the present study if it was associated with a practically significant DIF value on all five DIF indices.

When just the MHODDS and MSOS values computed in this study are examined, there are items identified as having gender related DIF. Figures 9 and 10 show that three items indicate DIF. In Figure 9, the MHODDS exceeds the Delta difference bands for items 12, 13, and 15. But item 15 is slightly easier for females. Examination of the MSOS values in Figure 10 shows these same items exceeded the .02 value taken as the arbitrary indication of DIF for the MSOS index. Of course, the MSOS index is nondirectional. Thus, if one were to look



Note  $M_{SOS} \times 0.001$

Figure 8. Form 15a, GS, Black vs White



**Figure 9.** Form 15a, EI, Female vs Male

only at the two indexes used in the Linn et al. (1988) study, some gender differences in EI would be noted. However, the arbitrary nature of the criteria for DIF for these two indices has to be taken into consideration along with other judgments on the part of the researcher as to whether an individual item should be considered to have DIF. The point is that decisions about DIF in a given item begin and end with a judgment on the part of either the test developer or the researcher about whether an item demonstrates differential functioning and what is causing the differential functioning.

Summarizing the effects of sample size on the five DIF indices also involves judgments. The most notable finding from this study is that the consistency among the indices decreases dramatically as the sample size decreased from 500 to 100. This was manifest in the reduction of the correlations between the indices, and in the increasing variability of the indices in the smaller sample sizes. The plot of the MHODDS ratio in Figure 9, as well as Figures 5 and 6 in the Results section, show relative consistency of the index at sample sizes of 500 to 2,000, but spuriously large MHODDS values indicating DIF for sample sizes of 100. It was impossible to tell at what sample size between 100 and 500 the MHODDS would become unstable, since this study did not examine the behavior of the MHODDS at any of those intermediate values. Based on the results of this study however, it appears that the MHODDS should probably not be used for sample sizes as small as 100 cases.

In sum, it is important to echo the warning of others (Berk, 1982; Hills, 1989;) that the DIF researcher or test developer should not rely only on one DIF index, nor rely solely on tests of statistical significance to flag items for DIF. Rather, careful judgments while examining specific test items for DIF are necessary, for the quality of those judgments depends on the use of all available information about an item and the characteristics of the population responding to the item.

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**APPENDIX A: TOTAL SAMPLE RAW SCORE DESCRIPTIVE STATISTICS FOR GENDER AND ETHNIC GROUPS BY FORM**

**Table A-1. Descriptive Statistics of Subtest Raw Score Data  
for Total Sample- Males by Form**

|                 | Standard |           |        |        |          |     |     | KR-20   | N     |
|-----------------|----------|-----------|--------|--------|----------|-----|-----|---------|-------|
|                 | Mean     | Deviation | Median | Skew   | Kurtosis | Min | Max |         |       |
| <b>Form 15a</b> |          |           |        |        |          |     |     |         |       |
| GS              | 16.361   | 4.513     | 16.454 | -0.168 | -0.696   | 2   | 25  | 0.79631 | 12536 |
| AR              | 18.217   | 6.309     | 17.772 | +0.084 | -0.913   | 2   | 30  | 0.86994 | 12536 |
| WK              | 25.873   | 6.650     | 27.195 | -0.749 | -0.149   | 2   | 35  | 0.89240 | 12536 |
| PC              | 11.861   | 2.771     | 12.590 | -1.051 | +0.633   | 0   | 15  | 0.75134 | 12536 |
| AS              | 15.647   | 5.005     | 15.851 | -0.147 | -0.849   | 0   | 25  | 0.82320 | 12536 |
| MK              | 13.732   | 5.573     | 13.008 | +0.263 | -0.894   | 0   | 25  | 0.85424 | 12536 |
| MC              | 15.928   | 4.666     | 16.166 | -0.263 | -0.569   | 0   | 25  | 0.78942 | 12536 |
| EI              | 11.982   | 3.549     | 11.848 | +0.076 | -0.507   | 0   | 20  | 0.70988 | 12536 |
| <b>Form 15b</b> |          |           |        |        |          |     |     |         |       |
| GS              | 16.428   | 4.581     | 16.556 | -0.197 | -0.675   | 0   | 25  | 0.80252 | 10960 |
| AR              | 18.289   | 6.338     | 18.036 | +0.034 | -0.982   | 0   | 30  | 0.87510 | 10960 |
| WK              | 25.922   | 6.166     | 26.766 | -0.572 | -0.333   | 5   | 35  | 0.87450 | 10960 |
| PC              | 11.754   | 2.826     | 12.460 | -1.007 | +0.505   | 0   | 15  | 0.75941 | 10960 |
| AS              | 15.406   | 5.027     | 15.550 | -0.113 | -0.848   | 0   | 25  | 0.82211 | 10960 |
| MK              | 13.605   | 5.611     | 12.900 | +0.268 | -0.904   | 0   | 25  | 0.85625 | 10960 |
| MC              | 15.840   | 4.640     | 16.097 | -0.256 | -0.567   | 0   | 25  | 0.78564 | 10960 |
| EI              | 12.026   | 3.589     | 11.912 | +0.044 | -0.506   | 0   | 20  | 0.71764 | 10960 |
| <b>Form 15c</b> |          |           |        |        |          |     |     |         |       |
| GS              | 16.116   | 4.477     | 16.214 | -0.124 | -0.592   | 0   | 25  | 0.79202 | 11957 |
| AR              | 17.828   | 6.491     | 17.418 | +0.118 | -0.950   | 2   | 30  | 0.87885 | 11957 |
| WK              | 26.555   | 5.859     | 27.401 | -0.758 | +0.206   | 3   | 35  | 0.86758 | 11957 |
| PC              | 11.059   | 2.779     | 11.601 | -0.822 | +0.227   | 0   | 15  | 0.69780 | 11957 |
| AS              | 15.714   | 4.959     | 15.871 | -0.160 | -0.804   | 0   | 25  | 0.81631 | 11957 |
| MK              | 13.420   | 5.677     | 12.466 | +0.333 | -0.893   | 0   | 25  | 0.86124 | 11957 |
| MC              | 15.338   | 4.998     | 15.456 | -0.102 | -0.876   | 0   | 25  | 0.81388 | 11957 |
| EI              | 11.999   | 3.729     | 12.157 | -0.176 | -0.585   | 0   | 20  | 0.74113 | 11957 |
| <b>Form 16a</b> |          |           |        |        |          |     |     |         |       |
| GS              | 16.103   | 4.317     | 16.299 | -0.191 | -0.766   | 2   | 25  | 0.82549 | 11934 |
| AR              | 18.337   | 6.070     | 18.243 | +0.009 | -0.791   | 1   | 30  | 0.85956 | 11934 |
| WK              | 26.158   | 5.989     | 27.142 | -0.660 | -0.145   | 2   | 35  | 0.87197 | 11934 |
| PC              | 11.834   | 2.932     | 12.641 | -1.086 | +0.652   | 0   | 15  | 0.78004 | 11934 |
| AS              | 15.345   | 5.669     | 15.613 | -0.182 | -0.967   | 0   | 25  | 0.86225 | 11934 |
| MK              | 13.467   | 5.766     | 12.441 | +0.363 | -0.906   | 0   | 25  | 0.86336 | 11934 |
| MC              | 16.089   | 4.644     | 16.451 | -0.309 | -0.579   | 0   | 25  | 0.78247 | 11934 |
| EI              | 12.456   | 3.859     | 12.503 | -0.131 | -0.575   | 0   | 20  | 0.75677 | 11934 |

Table A-1. (Concluded)

|                 | Standard |           |        |        |          |     |     | KR-20   | N     |
|-----------------|----------|-----------|--------|--------|----------|-----|-----|---------|-------|
|                 | Mean     | Deviation | Median | Skew   | Kurtosis | Min | Max |         |       |
| <b>Form 16b</b> |          |           |        |        |          |     |     |         |       |
| GS              | 16.165   | 4.841     | 16.426 | -0.219 | -0.725   | 2   | 25  | 0.82796 | 11609 |
| AR              | 18.134   | 6.534     | 17.873 | +0.059 | -0.975   | 0   | 30  | 0.88105 | 11609 |
| WK              | 26.378   | 5.864     | 27.072 | -0.626 | -0.037   | 2   | 35  | 0.87290 | 11609 |
| PC              | 11.597   | 2.750     | 12.102 | -0.837 | +0.252   | 0   | 15  | 0.72711 | 11609 |
| AS              | 15.360   | 5.649     | 15.620 | -0.176 | -0.946   | 0   | 25  | 0.86175 | 11609 |
| MK              | 13.558   | 5.770     | 12.597 | +0.335 | -0.924   | 0   | 25  | 0.86404 | 11609 |
| MC              | 16.076   | 4.615     | 16.463 | -0.314 | -0.602   | 0   | 25  | 0.77969 | 11609 |
| E1              | 12.512   | 3.883     | 12.596 | -0.151 | -0.589   | 0   | 20  | 0.76056 | 11609 |
| <b>Form 17a</b> |          |           |        |        |          |     |     |         |       |
| GS              | 16.156   | 4.555     | 16.372 | -0.239 | -0.579   | 1   | 25  | 0.79492 | 11425 |
| AR              | 18.073   | 6.679     | 17.848 | +0.037 | -0.979   | 2   | 30  | 0.88606 | 11425 |
| WK              | 26.145   | 6.535     | 27.103 | -0.643 | -0.233   | 1   | 35  | 0.89122 | 11425 |
| PC              | 11.618   | 2.884     | 12.299 | -0.969 | +0.424   | 0   | 15  | 0.75568 | 11425 |
| AS              | 15.853   | 5.283     | 15.872 | -0.101 | -0.903   | 0   | 25  | 0.84367 | 11425 |
| MK              | 13.827   | 5.412     | 13.030 | +0.316 | -0.772   | 0   | 25  | 0.84813 | 11425 |
| MC              | 16.035   | 4.458     | 16.221 | -0.263 | -0.463   | 0   | 25  | 0.77248 | 11425 |
| E1              | 12.352   | 3.903     | 12.345 | -0.076 | -0.622   | 0   | 20  | 0.76752 | 11425 |
| <b>Form 17b</b> |          |           |        |        |          |     |     |         |       |
| GS              | 16.134   | 4.594     | 16.358 | -0.238 | -0.621   | 0   | 25  | 0.79873 | 10955 |
| AR              | 17.938   | 6.417     | 18.055 | -0.025 | -0.930   | 1   | 30  | 0.87643 | 10955 |
| WK              | 26.154   | 6.243     | 27.179 | -0.611 | -0.310   | 2   | 35  | 0.88238 | 10955 |
| PC              | 11.603   | 2.691     | 12.132 | -0.898 | +0.449   | 0   | 15  | 0.72959 | 10955 |
| AS              | 15.751   | 5.284     | 15.800 | -0.068 | -0.939   | 0   | 25  | 0.84131 | 10955 |
| MK              | 13.588   | 5.373     | 12.845 | +0.306 | -0.746   | 0   | 25  | 0.84366 | 10955 |
| MC              | 16.076   | 4.408     | 16.262 | -0.261 | -0.428   | 0   | 25  | 0.76726 | 10955 |
| E1              | 12.133   | 3.922     | 12.019 | -0.003 | -0.668   | 0   | 20  | 0.76768 | 10955 |

**Table A-2. Descriptive Statistics of Subtest Raw Score Data  
for Total Sample- Females by Form**

|                 | Standard |           |        |        |          |     |     | KR-20   | N    |
|-----------------|----------|-----------|--------|--------|----------|-----|-----|---------|------|
|                 | Mean     | Deviation | Median | Skew   | Kurtosis | Min | Max |         |      |
| <b>Form 15a</b> |          |           |        |        |          |     |     |         |      |
| GS              | 14.744   | 4.048     | 14.515 | +0.131 | -0.429   | 2   | 25  | 0.73751 | 2397 |
| AR              | 16.769   | 5.736     | 15.997 | +0.361 | -0.584   | 3   | 30  | 0.83521 | 2397 |
| WK              | 25.620   | 6.621     | 26.792 | -0.632 | -0.313   | 3   | 35  | 0.89054 | 2397 |
| PC              | 12.270   | 2.407     | 12.831 | -1.135 | +1.127   | 1   | 15  | 0.70012 | 2397 |
| AS              | 9.861    | 3.400     | 9.516  | +0.543 | +0.493   | 0   | 23  | 0.56135 | 2397 |
| MK              | 14.062   | 5.120     | 13.620 | +0.219 | -0.718   | 0   | 25  | 0.82680 | 2397 |
| MC              | 12.239   | 4.087     | 12.028 | +0.185 | -0.335   | 0   | 24  | 0.68614 | 2397 |
| EI              | 9.290    | 2.710     | 9.140  | +0.295 | +0.473   | 0   | 20  | 0.44146 | 2397 |
| <b>Form 15b</b> |          |           |        |        |          |     |     |         |      |
| GS              | 14.751   | 4.011     | 14.552 | +0.131 | -0.305   | 3   | 25  | 0.73035 | 2034 |
| AR              | 16.966   | 5.932     | 16.480 | +0.282 | -0.773   | 4   | 30  | 0.85221 | 2034 |
| WK              | 26.138   | 5.612     | 26.785 | -0.458 | -0.424   | 8   | 35  | 0.84700 | 2034 |
| PC              | 12.042   | 2.470     | 12.559 | -1.069 | +0.924   | 2   | 15  | 0.69970 | 2034 |
| AS              | 9.759    | 3.457     | 9.491  | +0.557 | +0.508   | 0   | 24  | 0.57538 | 2034 |
| MK              | 13.687   | 5.125     | 13.343 | +0.213 | -0.679   | 0   | 25  | 0.82574 | 2034 |
| MC              | 12.023   | 4.119     | 11.727 | +0.291 | -0.236   | 0   | 25  | 0.68948 | 2034 |
| EI              | 9.266    | 2.719     | 9.080  | +0.400 | +0.426   | 0   | 20  | 0.44561 | 2034 |
| <b>Form 15c</b> |          |           |        |        |          |     |     |         |      |
| GS              | 14.194   | 3.905     | 14.056 | +0.140 | -0.271   | 3   | 25  | 0.70056 | 2221 |
| AR              | 16.038   | 5.880     | 15.477 | +0.364 | -0.534   | 3   | 30  | 0.84623 | 2221 |
| WK              | 26.038   | 5.879     | 26.629 | -0.500 | -0.341   | 0   | 35  | 0.86159 | 2221 |
| PC              | 11.357   | 2.505     | 11.793 | -0.886 | +0.622   | 0   | 15  | 0.64318 | 2221 |
| AS              | 10.647   | 3.655     | 10.265 | +0.523 | +0.256   | 0   | 25  | 0.61892 | 2221 |
| MK              | 13.710   | 5.298     | 13.221 | +0.176 | -0.816   | 0   | 25  | 0.83905 | 2221 |
| MC              | 11.541   | 4.083     | 11.031 | +0.469 | -0.144   | 0   | 25  | 0.68496 | 2221 |
| EI              | 9.041    | 3.239     | 8.838  | +0.270 | -0.012   | 0   | 20  | 0.61724 | 2221 |
| <b>Form 16a</b> |          |           |        |        |          |     |     |         |      |
| GS              | 15.015   | 4.453     | 15.019 | -0.023 | -0.551   | 2   | 25  | 0.78427 | 2331 |
| AR              | 17.149   | 5.527     | 17.004 | +0.104 | -0.559   | 3   | 30  | 0.81916 | 2331 |
| WK              | 26.269   | 5.328     | 27.193 | -0.592 | -0.291   | 8   | 35  | 0.86459 | 2331 |
| PC              | 12.151   | 2.590     | 12.781 | -1.227 | +1.408   | 1   | 15  | 0.73256 | 2331 |
| AS              | 8.505    | 3.726     | 8.073  | +0.606 | +0.257   | 0   | 24  | 0.65759 | 2331 |
| MK              | 14.005   | 5.237     | 13.555 | +0.236 | -0.819   | 1   | 25  | 0.83309 | 2331 |
| MC              | 12.815   | 4.184     | 12.636 | +0.157 | -0.422   | 0   | 25  | 0.69845 | 2331 |
| EI              | 9.392    | 3.084     | 9.308  | +0.199 | -0.171   | 0   | 19  | 0.55955 | 2331 |

Table A-2. (Concluded)

|                 | Mean   | Standard Deviation | Median | Skew   | Kurtosis | Min | Max | KR-20   | N    |
|-----------------|--------|--------------------|--------|--------|----------|-----|-----|---------|------|
| <b>Form 16b</b> |        |                    |        |        |          |     |     |         |      |
| GS              | 14.901 | 4.441              | 14.805 | +0.043 | -0.661   | 4   | 25  | 0.78425 | 2186 |
| AR              | 16.941 | 5.863              | 16.390 | +0.236 | -0.715   | 3   | 30  | 0.84404 | 2186 |
| WK              | 26.952 | 5.266              | 27.476 | -0.605 | +0.116   | 5   | 35  | 0.84493 | 2186 |
| PC              | 12.038 | 2.440              | 12.506 | -0.954 | +0.689   | 2   | 15  | 0.67738 | 2186 |
| AS              | 8.460  | 3.717              | 7.961  | +0.622 | +0.284   | 0   | 23  | 0.65504 | 2186 |
| MK              | 13.991 | 5.259              | 13.707 | +0.179 | -0.876   | 3   | 25  | 0.83429 | 2186 |
| MC              | 12.713 | 4.162              | 12.448 | +0.242 | -0.403   | 0   | 25  | 0.69323 | 2186 |
| EI              | 9.344  | 3.196              | 9.187  | +0.332 | -0.016   | 1   | 20  | 0.59456 | 2186 |
| <b>Form 17a</b> |        |                    |        |        |          |     |     |         |      |
| GS              | 14.550 | 4.288              | 14.611 | -0.083 | -0.574   | 2   | 25  | 0.74095 | 2123 |
| AR              | 16.756 | 6.264              | 16.243 | +0.247 | -0.833   | 3   | 30  | 0.86407 | 2123 |
| WK              | 25.802 | 6.123              | 26.331 | -0.498 | -0.317   | 6   | 35  | 0.87144 | 2123 |
| PC              | 12.119 | 2.468              | 12.680 | -1.062 | +1.000   | 0   | 15  | 0.69424 | 2123 |
| AS              | 10.052 | 3.595              | 9.719  | +0.576 | +0.428   | 0   | 24  | 0.60636 | 2123 |
| MK              | 14.042 | 5.012              | 13.624 | +0.188 | -0.712   | 1   | 25  | 0.82325 | 2123 |
| MC              | 12.875 | 3.862              | 12.741 | +0.158 | -0.198   | 2   | 25  | 0.65712 | 2123 |
| EI              | 9.114  | 3.046              | 8.901  | +0.440 | +0.241   | 1   | 20  | 0.56230 | 2123 |
| <b>Form 17b</b> |        |                    |        |        |          |     |     |         |      |
| GS              | 14.800 | 4.252              | 14.820 | -0.056 | -0.481   | 1   | 25  | 0.73810 | 2032 |
| AR              | 16.535 | 5.906              | 16.154 | +0.226 | -0.637   | 2   | 30  | 0.84677 | 2032 |
| WK              | 27.016 | 5.905              | 28.015 | -0.666 | -0.186   | 3   | 35  | 0.87579 | 2032 |
| PC              | 11.935 | 2.192              | 12.203 | -0.849 | +0.992   | 2   | 15  | 0.63226 | 2032 |
| AS              | 9.906  | 3.639              | 9.523  | +0.527 | +0.220   | 0   | 23  | 0.61314 | 2032 |
| MK              | 13.987 | 4.989              | 13.568 | +0.206 | -0.733   | 0   | 25  | 0.82037 | 2032 |
| MC              | 12.813 | 3.823              | 12.598 | +0.166 | -0.120   | 0   | 25  | 0.64945 | 2032 |
| EI              | 8.990  | 3.097              | 8.804  | +0.385 | +0.192   | 0   | 20  | 0.57594 | 2032 |

**Table A-3. Descriptive Statistics of Subtest Raw Score Data  
for Total Sample - Whites by Form**

|                 | Mean   | Standard Deviation | Median | Skew   | Kurtosis | Min | Max | KR-20   | N    |
|-----------------|--------|--------------------|--------|--------|----------|-----|-----|---------|------|
| <b>Form 15a</b> |        |                    |        |        |          |     |     |         |      |
| GS              | 17.498 | 4.130              | 17.743 | -0.337 | -0.447   | 2   | 25  | 0.77319 | 9427 |
| AR              | 19.676 | 6.087              | 19.740 | -0.134 | -0.867   | 2   | 30  | 0.86753 | 9427 |
| WK              | 27.741 | 5.739              | 29.042 | -1.042 | +0.825   | 3   | 35  | 0.87440 | 9427 |
| PC              | 12.501 | 2.446              | 13.179 | -1.379 | +1.842   | 1   | 15  | 0.72605 | 9427 |
| AS              | 16.617 | 4.786              | 17.036 | -0.319 | -0.681   | 0   | 25  | 0.81613 | 9427 |
| MK              | 14.665 | 5.588              | 14.334 | +0.081 | -0.984   | 0   | 25  | 0.85966 | 9427 |
| MC              | 16.831 | 4.416              | 17.218 | -0.419 | -0.343   | 0   | 25  | 0.77476 | 9427 |
| EI              | 12.456 | 3.474              | 12.387 | -0.011 | -0.451   | 0   | 20  | 0.70379 | 9427 |
| <b>Form 15b</b> |        |                    |        |        |          |     |     |         |      |
| GS              | 17.595 | 4.161              | 17.880 | -0.368 | -0.378   | 2   | 25  | 0.77716 | 8107 |
| AR              | 19.864 | 6.064              | 20.201 | -0.215 | -0.874   | 3   | 30  | 0.87037 | 8107 |
| WK              | 27.691 | 5.373              | 28.606 | -0.805 | +0.327   | 5   | 35  | 0.85489 | 8107 |
| PC              | 12.378 | 2.472              | 12.988 | -1.288 | +1.615   | 0   | 15  | 0.72760 | 8107 |
| AS              | 16.515 | 4.750              | 16.885 | -0.288 | -0.703   | 0   | 25  | 0.81111 | 8107 |
| MK              | 14.502 | 5.664              | 14.230 | +0.081 | -0.992   | 0   | 25  | 0.86326 | 8107 |
| MC              | 16.800 | 4.378              | 17.182 | -0.403 | -0.382   | 0   | 25  | 0.76972 | 8107 |
| EI              | 12.552 | 3.503              | 12.523 | -0.052 | -0.520   | 0   | 20  | 0.71077 | 8107 |
| <b>Form 15c</b> |        |                    |        |        |          |     |     |         |      |
| GS              | 17.239 | 4.065              | 17.384 | -0.221 | -0.450   | 4   | 25  | 0.76358 | 8982 |
| AR              | 19.338 | 6.256              | 19.327 | -0.111 | -0.896   | 2   | 30  | 0.87573 | 8982 |
| WK              | 28.160 | 5.102              | 28.995 | -1.018 | +1.221   | 3   | 35  | 0.84833 | 8982 |
| PC              | 11.758 | 2.466              | 12.247 | -1.145 | +1.425   | 0   | 15  | 0.65763 | 8982 |
| AS              | 16.826 | 4.576              | 17.156 | -0.311 | -0.592   | 0   | 25  | 0.79205 | 8982 |
| MK              | 14.452 | 5.712              | 13.954 | +0.127 | -1.033   | 0   | 25  | 0.86715 | 8982 |
| MC              | 16.454 | 4.680              | 16.822 | -0.296 | -0.653   | 0   | 25  | 0.79511 | 8982 |
| EI              | 12.750 | 3.514              | 12.992 | -0.312 | -0.364   | 0   | 20  | 0.71734 | 8982 |
| <b>Form 16a</b> |        |                    |        |        |          |     |     |         |      |
| GS              | 17.328 | 4.437              | 17.717 | -0.406 | -0.454   | 2   | 25  | 0.80654 | 8936 |
| AR              | 19.696 | 5.803              | 19.806 | -0.161 | -0.709   | 1   | 30  | 0.85350 | 8936 |
| WK              | 27.940 | 5.219              | 28.955 | -0.948 | +0.702   | 4   | 35  | 0.85364 | 8936 |
| PC              | 12.600 | 2.461              | 13.266 | -1.497 | +2.455   | 0   | 15  | 0.73554 | 8936 |
| AS              | 16.504 | 5.330              | 17.076 | -0.357 | -0.785   | 0   | 25  | 0.84997 | 8936 |
| MK              | 14.307 | 5.829              | 13.600 | +0.203 | -1.044   | 0   | 25  | 0.87047 | 8936 |
| MC              | 17.066 | 4.329              | 17.573 | -0.483 | -0.248   | 0   | 25  | 0.76075 | 8936 |
| EI              | 13.031 | 3.675              | 13.125 | -0.215 | -0.437   | 0   | 20  | 0.74113 | 8936 |

Table A-3. (Concluded)

|                 | Mean   | Standard Deviation | Median | Skew   | Kurtosis | Min | Max | KR-20   | N    |
|-----------------|--------|--------------------|--------|--------|----------|-----|-----|---------|------|
| <b>Form 16b</b> |        |                    |        |        |          |     |     |         |      |
| GS              | 17.374 | 4.479              | 17.832 | -0.427 | -0.408   | 2   | 25  | 0.81136 | 8618 |
| AR              | 19.729 | 6.254              | 19.934 | -0.183 | -0.875   | 0   | 30  | 0.87669 | 8618 |
| WK              | 28.085 | 5.172              | 28.908 | -0.847 | +0.516   | 2   | 35  | 0.85482 | 8618 |
| PC              | 12.254 | 2.447              | 12.778 | -1.100 | +1.114   | 0   | 15  | 0.69888 | 8618 |
| AS              | 16.555 | 5.349              | 17.146 | -0.372 | -0.767   | 0   | 25  | 0.85210 | 8618 |
| MK              | 14.444 | 5.806              | 13.913 | +0.153 | -1.061   | 0   | 25  | 0.86989 | 8618 |
| MC              | 17.043 | 4.318              | 17.577 | -0.465 | -0.386   | 0   | 25  | 0.76027 | 8618 |
| EI              | 13.145 | 3.697              | 13.260 | -0.215 | -0.540   | 0   | 20  | 0.74718 | 8618 |
| <b>Form 17a</b> |        |                    |        |        |          |     |     |         |      |
| GS              | 17.425 | 4.062              | 17.723 | -0.402 | -0.269   | 3   | 25  | 0.76235 | 8395 |
| AR              | 19.807 | 6.387              | 20.072 | -0.229 | -0.848   | 3   | 30  | 0.88259 | 8395 |
| WK              | 28.018 | 5.630              | 28.972 | -0.906 | +0.539   | 1   | 35  | 0.87317 | 8395 |
| PC              | 12.329 | 2.519              | 12.960 | -1.286 | +1.549   | 1   | 15  | 0.72257 | 8395 |
| AS              | 17.048 | 4.986              | 17.389 | -0.300 | -0.737   | 0   | 25  | 0.83353 | 8395 |
| MK              | 14.643 | 5.504              | 14.077 | +0.151 | -0.924   | 0   | 25  | 0.85800 | 8395 |
| MC              | 16.942 | 4.198              | 17.235 | -0.391 | -0.303   | 0   | 25  | 0.75377 | 8395 |
| EI              | 12.985 | 3.765              | 13.078 | -0.180 | -0.571   | 0   | 20  | 0.75894 | 8395 |
| <b>Form 17b</b> |        |                    |        |        |          |     |     |         |      |
| GS              | 17.393 | 4.090              | 17.730 | -0.408 | -0.256   | 0   | 25  | 0.76494 | 8082 |
| AR              | 19.440 | 6.133              | 19.889 | -0.256 | -0.738   | 2   | 30  | 0.87150 | 8082 |
| WK              | 28.148 | 5.291              | 29.120 | -0.892 | +0.553   | 2   | 35  | 0.85943 | 8082 |
| PC              | 12.221 | 2.400              | 12.729 | -1.127 | +1.312   | 0   | 15  | 0.69978 | 8082 |
| AS              | 16.927 | 4.983              | 17.264 | -0.265 | -0.765   | 2   | 25  | 0.83015 | 8082 |
| MK              | 14.342 | 5.428              | 13.833 | +0.162 | -0.862   | 0   | 25  | 0.85109 | 8082 |
| MC              | 16.940 | 4.149              | 17.184 | -0.358 | -0.300   | 0   | 25  | 0.74772 | 8082 |
| EI              | 12.721 | 3.788              | 12.699 | -0.095 | -0.619   | 0   | 20  | 0.75771 | 8082 |

**Table A-4. Descriptive Statistics of Subtest Raw Score Data  
for Total Sample - Blacks by Form**

|                 | Mean   | Standard Deviation | Median | Skew   | Kurtosis | Min | Max | KR-20   | N    |
|-----------------|--------|--------------------|--------|--------|----------|-----|-----|---------|------|
| <b>Form 15a</b> |        |                    |        |        |          |     |     |         |      |
| GS              | 13.362 | 3.817              | 13.110 | +0.307 | -0.133   | 2   | 25  | 0.67776 | 3770 |
| AR              | 14.354 | 4.913              | 13.821 | +0.559 | +0.129   | 2   | 30  | 0.75896 | 3770 |
| WK              | 22.481 | 6.606              | 23.046 | -0.285 | -0.670   | 2   | 35  | 0.86841 | 3770 |
| PC              | 10.818 | 2.853              | 11.251 | -0.657 | -0.093   | 0   | 15  | 0.71408 | 3770 |
| AS              | 10.809 | 3.879              | 10.316 | +0.571 | +0.167   | 0   | 24  | 0.65800 | 3770 |
| MK              | 11.782 | 4.721              | 11.051 | +0.562 | -0.229   | 0   | 25  | 0.78427 | 3770 |
| MC              | 12.086 | 3.963              | 11.914 | +0.194 | -0.201   | 0   | 25  | 0.66536 | 3770 |
| EI              | 9.690  | 2.961              | 9.408  | +0.485 | +0.406   | 0   | 20  | 0.53930 | 3770 |
| <b>Form 15b</b> |        |                    |        |        |          |     |     |         |      |
| GS              | 13.464 | 3.854              | 13.181 | +0.284 | -0.157   | 0   | 25  | 0.68345 | 3285 |
| AR              | 14.386 | 5.100              | 13.667 | +0.597 | -0.023   | 0   | 30  | 0.78811 | 3285 |
| WK              | 22.994 | 5.826              | 23.155 | -0.183 | -0.497   | 5   | 35  | 0.83303 | 3285 |
| PC              | 10.803 | 2.912              | 11.331 | -0.672 | -0.161   | 1   | 15  | 0.72743 | 3285 |
| AS              | 10.561 | 3.846              | 10.125 | +0.552 | +0.233   | 0   | 25  | 0.65108 | 3285 |
| MK              | 11.621 | 4.683              | 10.941 | +0.545 | -0.193   | 0   | 25  | 0.78094 | 3285 |
| MC              | 12.017 | 3.986              | 11.830 | +0.168 | -0.216   | 0   | 25  | 0.66813 | 3285 |
| EI              | 9.627  | 2.996              | 9.347  | +0.497 | +0.633   | 0   | 20  | 0.55174 | 3285 |
| <b>Form 15c</b> |        |                    |        |        |          |     |     |         |      |
| GS              | 12.979 | 3.786              | 12.722 | +0.319 | +0.000   | 0   | 25  | 0.65969 | 3589 |
| AR              | 13.709 | 5.106              | 12.920 | +0.641 | +0.083   | 3   | 30  | 0.78437 | 3589 |
| WK              | 23.192 | 5.902              | 23.317 | -0.237 | -0.417   | 0   | 35  | 0.83785 | 3589 |
| PC              | 9.897  | 2.776              | 10.186 | -0.432 | -0.359   | 0   | 15  | 0.64798 | 3589 |
| AS              | 11.003 | 3.843              | 10.504 | +0.599 | +0.219   | 0   | 25  | 0.65431 | 3589 |
| MK              | 11.402 | 4.751              | 10.553 | +0.651 | -0.123   | 0   | 25  | 0.78978 | 3589 |
| MC              | 11.086 | 3.865              | 10.596 | +0.558 | +0.020   | 0   | 24  | 0.65128 | 3589 |
| EI              | 9.063  | 3.174              | 8.845  | +0.301 | -0.067   | 0   | 20  | 0.60450 | 3589 |
| <b>Form 16a</b> |        |                    |        |        |          |     |     |         |      |
| GS              | 13.188 | 4.216              | 12.929 | +0.248 | -0.417   | 2   | 25  | 0.74528 | 3705 |
| AR              | 14.905 | 5.052              | 14.525 | +0.299 | -0.345   | 3   | 30  | 0.77303 | 3705 |
| WK              | 22.915 | 5.801              | 23.180 | -0.221 | -0.447   | 2   | 35  | 0.83560 | 3705 |
| PC              | 10.584 | 3.050              | 11.064 | -0.592 | -0.327   | 0   | 15  | 0.74584 | 3705 |
| AS              | 9.630  | 4.423              | 8.952  | +0.693 | +0.222   | 0   | 25  | 0.75063 | 3705 |
| MK              | 11.847 | 4.889              | 10.947 | +0.586 | -0.311   | 0   | 25  | 0.79738 | 3705 |
| MC              | 12.415 | 4.027              | 12.180 | +0.214 | -0.349   | 0   | 25  | 0.66943 | 3705 |
| EI              | 9.729  | 3.459              | 9.476  | +0.375 | -0.073   | 0   | 20  | 0.65392 | 3705 |

Table A-4. (Concluded)

|                 | Standard |           |        |        |          |     |     | KR-20   | N    |
|-----------------|----------|-----------|--------|--------|----------|-----|-----|---------|------|
|                 | Mean     | Deviation | Median | Skew   | Kurtosis | Min | Max |         |      |
| <b>Form 16b</b> |          |           |        |        |          |     |     |         |      |
| GS              | 13.263   | 4.247     | 12.980 | +0.229 | -0.482   | 3   | 25  | 0.75039 | 3542 |
| AR              | 14.323   | 5.327     | 13.603 | +0.547 | -0.128   | 1   | 30  | 0.80153 | 3542 |
| WK              | 23.830   | 5.414     | 24.074 | -0.325 | -0.113   | 4   | 35  | 0.83270 | 3542 |
| PC              | 10.603   | 2.799     | 10.897 | -0.500 | -0.233   | 0   | 15  | 0.68853 | 3542 |
| AS              | 9.715    | 4.441     | 9.052  | +0.619 | +0.034   | 0   | 25  | 0.75297 | 3542 |
| MK              | 11.836   | 4.977     | 10.910 | +0.601 | -0.321   | 1   | 25  | 0.80535 | 3542 |
| MC              | 12.419   | 4.016     | 12.207 | +0.187 | -0.346   | 0   | 25  | 0.66590 | 3542 |
| EI              | 9.727    | 3.475     | 9.537  | +0.311 | -0.147   | 0   | 20  | 0.65633 | 3542 |
| <b>Form 17a</b> |          |           |        |        |          |     |     |         |      |
| GS              | 13.084   | 4.055     | 12.955 | +0.166 | -0.303   | 2   | 25  | 0.69583 | 3535 |
| AR              | 13.995   | 5.445     | 13.116 | +0.604 | -0.151   | 2   | 30  | 0.80838 | 3535 |
| WK              | 22.699   | 6.411     | 22.913 | -0.177 | -0.532   | 2   | 35  | 0.86215 | 3535 |
| PC              | 10.558   | 2.965     | 10.965 | -0.619 | -0.124   | 0   | 15  | 0.72466 | 3535 |
| AS              | 10.828   | 3.997     | 10.353 | +0.652 | +0.410   | 0   | 25  | 0.68701 | 3535 |
| MK              | 12.210   | 4.585     | 11.594 | +0.494 | -0.194   | 0   | 25  | 0.77727 | 3535 |
| MC              | 12.689   | 3.843     | 12.614 | +0.101 | -0.127   | 0   | 25  | 0.65347 | 3535 |
| EI              | 9.538    | 3.361     | 9.184  | +0.471 | +0.191   | 0   | 20  | 0.64599 | 3535 |
| <b>Form 17b</b> |          |           |        |        |          |     |     |         |      |
| GS              | 13.146   | 4.073     | 12.903 | +0.225 | -0.325   | 2   | 25  | 0.70076 | 3381 |
| AR              | 14.163   | 5.298     | 13.515 | +0.473 | -0.313   | 1   | 30  | 0.79799 | 3381 |
| WK              | 23.133   | 6.200     | 23.210 | -0.181 | -0.602   | 4   | 35  | 0.85919 | 3381 |
| PC              | 10.618   | 2.611     | 10.982 | -0.626 | +0.076   | 0   | 15  | 0.67000 | 3381 |
| AS              | 10.726   | 4.010     | 10.221 | +0.686 | +0.411   | 0   | 25  | 0.68725 | 3381 |
| MK              | 12.063   | 4.589     | 11.391 | +0.492 | -0.278   | 0   | 25  | 0.77548 | 3381 |
| MC              | 12.814   | 3.833     | 12.638 | +0.121 | -0.179   | 0   | 25  | 0.65003 | 3381 |
| EI              | 9.498    | 3.424     | 9.207  | +0.478 | +0.119   | 0   | 20  | 0.66097 | 3381 |

**Table A-5. Descriptive Statistics of Subtest Raw Score Data  
for Total Sample - Hispanics by Form**

|                 | Mean   | Standard Deviation | Median | Skew   | Kurtosis | Min | Max | KR-20   | N    |
|-----------------|--------|--------------------|--------|--------|----------|-----|-----|---------|------|
| <b>Form 15a</b> |        |                    |        |        |          |     |     |         |      |
| GS              | 14.301 | 4.193              | 14.075 | +0.119 | -0.506   | 3   | 25  | 0.73642 | 1191 |
| AR              | 16.303 | 5.647              | 15.719 | +0.331 | -0.466   | 3   | 30  | 0.82537 | 1191 |
| WK              | 22.615 | 6.929              | 23.170 | -0.256 | -0.795   | 3   | 35  | 0.87867 | 1191 |
| PC              | 11.196 | 2.863              | 11.689 | -0.758 | -0.005   | 2   | 15  | 0.73195 | 1191 |
| AS              | 1.834  | 4.690              | 12.179 | +0.298 | -0.636   | 1   | 25  | 0.77471 | 1191 |
| MK              | 15.004 | 5.158              | 12.332 | +0.390 | -0.547   | 0   | 25  | 0.82184 | 1191 |
| MC              | 14.101 | 4.258              | 14.083 | -0.023 | -0.310   | 0   | 25  | 0.72245 | 1191 |
| EI              | 10.458 | 3.426              | 10.230 | +0.350 | -0.206   | 0   | 20  | 0.66934 | 1191 |
| <b>Form 15b</b> |        |                    |        |        |          |     |     |         |      |
| GS              | 14.318 | 4.442              | 13.980 | +0.158 | -0.522   | 3   | 25  | 0.76670 | 1134 |
| AR              | 16.312 | 5.837              | 15.672 | +0.296 | -0.669   | 3   | 30  | 0.84411 | 1134 |
| WK              | 23.131 | 6.329              | 23.160 | -0.130 | -0.869   | 6   | 35  | 0.86057 | 1134 |
| PC              | 10.868 | 3.117              | 11.514 | -0.652 | -0.368   | 1   | 15  | 0.76716 | 1134 |
| AS              | 12.541 | 4.523              | 12.204 | +0.280 | -0.563   | 2   | 25  | 0.75307 | 1134 |
| MK              | 12.787 | 5.229              | 11.690 | +0.439 | -0.674   | 2   | 25  | 0.82870 | 1134 |
| MC              | 13.805 | 4.337              | 13.871 | +0.040 | -0.506   | 2   | 25  | 0.73352 | 1134 |
| EI              | 10.631 | 3.336              | 10.528 | +0.285 | -0.096   | 1   | 20  | 0.64470 | 1134 |
| <b>Form 15c</b> |        |                    |        |        |          |     |     |         |      |
| GS              | 13.889 | 4.024              | 13.684 | +0.084 | -0.346   | 2   | 24  | 0.70618 | 1095 |
| AR              | 15.556 | 5.526              | 14.797 | +0.486 | -0.300   | 4   | 30  | 0.81812 | 1095 |
| WK              | 24.305 | 5.485              | 24.694 | -0.367 | -0.266   | 7   | 35  | 0.81995 | 1095 |
| PC              | 10.014 | 2.878              | 10.430 | -0.483 | -0.388   | 0   | 15  | 0.67540 | 1095 |
| AS              | 12.915 | 4.691              | 12.482 | +0.290 | -0.531   | 0   | 25  | 0.77429 | 1095 |
| MK              | 11.980 | 5.191              | 11.173 | +0.409 | -0.447   | 0   | 25  | 0.82591 | 1095 |
| MC              | 12.935 | 4.472              | 12.454 | +0.258 | -0.460   | 0   | 25  | 0.74710 | 1095 |
| EI              | 10.075 | 3.467              | 9.949  | +0.054 | -0.386   | 0   | 20  | 0.67372 | 1095 |
| <b>Form 16a</b> |        |                    |        |        |          |     |     |         |      |
| GS              | 14.106 | 4.405              | 13.949 | +0.169 | -0.541   | 3   | 25  | 0.76900 | 1100 |
| AR              | 16.487 | 5.516              | 16.325 | +0.131 | -0.558   | 3   | 30  | 0.81819 | 1100 |
| WK              | 23.577 | 6.021              | 24.125 | -0.319 | -0.520   | 6   | 35  | 0.84841 | 1100 |
| PC              | 10.870 | 3.224              | 11.588 | -0.729 | -0.270   | 1   | 15  | 0.78575 | 1100 |
| AS              | 11.705 | 5.338              | 11.027 | +0.344 | -0.816   | 1   | 25  | 0.83136 | 1100 |
| MK              | 12.665 | 5.450              | 11.636 | +0.422 | -0.738   | 1   | 25  | 0.83967 | 1100 |
| MC              | 13.987 | 4.313              | 13.886 | +0.000 | -0.554   | 2   | 25  | 0.72142 | 1100 |
| EI              | 10.862 | 3.707              | 10.631 | +0.198 | -0.554   | 1   | 20  | 0.71069 | 1100 |

Table A-5. (Concluded)

|                 | Standard |           |        |        |          |     |     |         |      |
|-----------------|----------|-----------|--------|--------|----------|-----|-----|---------|------|
|                 | Mean     | Deviation | Median | Skew   | Kurtosis | Min | Max | KR-20   | N    |
| <b>Form 16b</b> |          |           |        |        |          |     |     |         |      |
| GS              | 14.126   | 4.451     | 13.909 | +0.123 | -0.564   | 2   | 25  | 0.77552 | 1106 |
| AR              | 15.981   | 5.813     | 15.265 | +0.384 | -0.630   | 4   | 30  | 0.83749 | 1106 |
| WK              | 23.327   | 6.252     | 23.610 | -0.349 | -0.311   | 5   | 35  | 0.86318 | 1106 |
| PC              | 10.809   | 2.880     | 11.248 | -0.608 | -0.229   | 1   | 15  | 0.71133 | 1106 |
| AS              | 11.850   | 5.200     | 11.205 | +0.383 | -0.633   | 1   | 25  | 0.82097 | 1106 |
| MK              | 12.665   | 5.313     | 11.838 | +0.420 | -0.573   | 0   | 25  | 0.83086 | 1106 |
| MC              | 14.216   | 4.430     | 14.293 | -0.060 | -0.547   | 0   | 25  | 0.73973 | 1106 |
| EI              | 10.723   | 3.796     | 10.686 | +0.114 | -0.578   | 0   | 20  | 0.72585 | 1106 |
| <b>Form 17a</b> |          |           |        |        |          |     |     |         |      |
| GS              | 13.726   | 4.416     | 13.452 | +0.157 | -0.497   | 1   | 25  | 0.75098 | 1115 |
| AR              | 15.881   | 5.832     | 15.388 | +0.310 | -0.497   | 4   | 30  | 0.83679 | 1115 |
| WK              | 23.357   | 6.580     | 23.478 | -0.231 | -0.540   | 5   | 35  | 0.86946 | 1115 |
| PC              | 10.813   | 3.096     | 11.340 | -0.636 | -0.325   | 0   | 15  | 0.75736 | 1115 |
| AS              | 12.842   | 4.730     | 12.413 | +0.357 | -0.437   | 2   | 25  | 0.77814 | 1115 |
| MK              | 12.977   | 4.931     | 12.415 | +0.410 | -0.471   | 1   | 25  | 0.80707 | 1115 |
| MC              | 14.229   | 4.213     | 14.197 | +0.021 | -0.445   | 4   | 25  | 0.72263 | 1115 |
| EI              | 10.708   | 3.677     | 10.504 | +0.212 | -0.327   | 0   | 20  | 0.71608 | 1115 |
| <b>Form 17b</b> |          |           |        |        |          |     |     |         |      |
| GS              | 13.946   | 4.362     | 13.651 | +0.154 | -0.427   | 2   | 25  | 0.74515 | 1012 |
| AR              | 16.019   | 5.879     | 15.449 | +0.251 | -0.723   | 4   | 30  | 0.84167 | 1012 |
| WK              | 23.253   | 6.420     | 23.025 | -0.049 | -0.390   | 3   | 35  | 0.86562 | 1012 |
| PC              | 10.885   | 2.842     | 11.513 | -0.813 | +0.218   | 0   | 15  | 0.72736 | 1012 |
| AS              | 12.827   | 4.886     | 12.227 | +0.370 | -0.536   | 2   | 25  | 0.79304 | 1012 |
| MK              | 13.083   | 5.159     | 12.487 | +0.329 | -0.601   | 0   | 25  | 0.82330 | 1012 |
| MC              | 14.196   | 4.229     | 14.216 | -0.082 | -0.233   | 0   | 25  | 0.72650 | 1012 |
| EI              | 10.575   | 3.815     | 10.098 | +0.360 | -0.496   | 0   | 20  | 0.73969 | 1012 |

**APPENDIX B: RANDOM SAMPLE DESCRIPTIVE STATISTICS FOR SUBTEST  
RAW SCORES FOR GENDER AND ETHNIC GROUPS BY FORM**

**Table B-1. Descriptive Statistics of Random Samples of Males, Form 15a**

| Subtest | Standard |           |        |        |          |         |         |         |      |  |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|--|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 15.570   | 4.695     | 15.583 | -0.122 | -0.493   | 4.000   | 25.000  | 0.79963 | 100  |  |
|         | 16.692   | 4.402     | 16.742 | -0.216 | -0.620   | 6.000   | 25.000  | 0.78607 | 500  |  |
|         | 16.235   | 4.471     | 16.241 | -0.122 | -0.638   | 4.000   | 25.000  | 0.79014 | 1000 |  |
|         | 16.402   | 4.495     | 16.622 | -0.216 | -0.647   | 2.000   | 25.000  | 0.79533 | 2000 |  |
| AR      | 17.600   | 6.653     | 16.929 | +0.019 | -0.917   | 4.000   | 29.000  | 0.88250 | 100  |  |
|         | 18.052   | 6.066     | 17.333 | +0.115 | -0.803   | 4.000   | 30.000  | 0.85657 | 500  |  |
|         | 18.279   | 6.243     | 17.827 | +0.104 | -0.922   | 3.000   | 30.000  | 0.86601 | 1000 |  |
|         | 18.054   | 6.284     | 17.580 | +0.097 | -0.869   | 2.000   | 30.000  | 0.86809 | 2000 |  |
| WK      | 26.950   | 6.076     | 27.955 | -0.946 | +0.384   | 8.000   | 35.000  | 0.88237 | 100  |  |
|         | 26.754   | 6.143     | 28.150 | -0.811 | +0.020   | 7.000   | 35.000  | 0.87986 | 500  |  |
|         | 26.123   | 6.662     | 27.521 | -0.803 | -0.099   | 6.000   | 35.000  | 0.89490 | 1000 |  |
|         | 26.051   | 6.561     | 27.444 | -0.794 | -0.085   | 3.000   | 35.000  | 0.89071 | 2000 |  |
| PC      | 11.360   | 2.820     | 11.900 | -0.865 | +0.314   | 4.000   | 15.000  | 0.73305 | 100  |  |
|         | 11.748   | 2.824     | 12.513 | -0.900 | +0.071   | 2.000   | 15.000  | 0.75676 | 500  |  |
|         | 11.884   | 2.794     | 12.625 | -1.143 | +0.972   | 0.000   | 15.000  | 0.75668 | 1000 |  |
|         | 11.868   | 2.716     | 12.531 | -0.984 | +0.418   | 2.000   | 15.000  | 0.73944 | 2000 |  |
| AS      | 15.180   | 5.106     | 14.833 | +0.134 | -0.862   | 4.000   | 25.000  | 0.82670 | 100  |  |
|         | 15.586   | 4.916     | 15.887 | -0.179 | -0.841   | 4.000   | 25.000  | 0.81462 | 500  |  |
|         | 15.708   | 4.994     | 15.955 | -0.177 | -0.809   | 3.000   | 25.000  | 0.82189 | 1000 |  |
|         | 15.580   | 4.970     | 15.761 | -0.146 | -0.830   | 0.000   | 25.000  | 0.82033 | 2000 |  |
| MK      | 13.500   | 5.577     | 12.700 | +0.305 | -1.014   | 4.000   | 25.000  | 0.85266 | 100  |  |
|         | 14.098   | 5.775     | 13.533 | +0.185 | -1.055   | 2.000   | 25.000  | 0.86689 | 500  |  |
|         | 13.934   | 5.629     | 13.125 | +0.278 | -0.980   | 2.000   | 25.000  | 0.85852 | 1000 |  |
|         | 13.672   | 5.535     | 12.900 | +0.295 | -0.889   | 1.000   | 25.000  | 0.85122 | 2000 |  |
| MC      | 15.940   | 4.343     | 16.250 | -0.187 | -0.701   | 4.000   | 24.000  | 0.75099 | 100  |  |
|         | 15.750   | 4.895     | 16.177 | -0.291 | -0.626   | 3.000   | 25.000  | 0.80809 | 500  |  |
|         | 16.034   | 4.744     | 16.066 | -0.144 | -0.759   | 3.000   | 25.000  | 0.79849 | 1000 |  |
|         | 15.898   | 4.675     | 16.182 | -0.264 | -0.587   | 1.000   | 25.000  | 0.78912 | 2000 |  |
| EI      | 12.400   | 3.528     | 12.045 | +0.340 | -0.791   | 6.000   | 20.000  | 0.71861 | 100  |  |
|         | 12.222   | 3.471     | 11.958 | +0.101 | -0.793   | 5.000   | 20.000  | 0.69715 | 500  |  |
|         | 11.974   | 3.556     | 11.776 | +0.206 | -0.556   | 3.000   | 20.000  | 0.71090 | 1000 |  |
|         | 12.024   | 3.508     | 11.897 | +0.106 | -0.566   | 3.000   | 20.000  | 0.70178 | 2000 |  |

**Table B-2. Descriptive Statistics of Random Samples of Males, Form 15b**

| Subtest | Standard |           |        |        |          |         |         |         |      |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |
| GS      | 16.260   | 4.507     | 16.625 | -0.127 | -0.754   | 6.000   | 25.000  | 0.78948 | 100  |
|         | 16.388   | 4.461     | 16.569 | -0.257 | -0.531   | 2.000   | 25.000  | 0.79042 | 500  |
|         | 16.714   | 4.627     | 16.823 | -0.242 | -0.718   | 3.000   | 25.000  | 0.81035 | 1000 |
|         | 16.471   | 4.559     | 16.657 | -0.230 | -0.675   | 3.000   | 25.000  | 0.80025 | 2000 |
| AR      | 18.010   | 6.545     | 17.900 | -0.017 | -1.032   | 5.000   | 30.000  | 0.88558 | 100  |
|         | 18.226   | 6.201     | 18.028 | +0.100 | -0.960   | 3.000   | 30.000  | 0.86817 | 500  |
|         | 18.282   | 6.350     | 18.020 | +0.012 | -0.942   | 3.000   | 30.000  | 0.87637 | 1000 |
|         | 18.246   | 6.389     | 17.941 | +0.049 | -1.033   | 2.000   | 30.000  | 0.87656 | 2000 |
| WK      | 25.670   | 6.745     | 26.500 | -0.450 | -0.540   | 8.000   | 35.000  | 0.89380 | 100  |
|         | 26.130   | 6.362     | 27.094 | -0.637 | -0.210   | 7.000   | 35.000  | 0.88461 | 500  |
|         | 25.645   | 6.155     | 26.276 | -0.504 | -0.396   | 7.000   | 35.000  | 0.86982 | 1000 |
|         | 25.818   | 6.156     | 26.671 | -0.526 | -0.427   | 5.000   | 35.000  | 0.87251 | 2000 |
| PC      | 11.800   | 2.712     | 12.389 | -1.043 | +0.617   | 3.000   | 15.000  | 0.73196 | 100  |
|         | 11.688   | 2.772     | 12.253 | -0.955 | +0.519   | 2.000   | 15.000  | 0.74222 | 500  |
|         | 11.672   | 2.806     | 12.403 | -0.863 | +0.133   | 1.000   | 15.000  | 0.74871 | 1000 |
|         | 11.775   | 2.790     | 12.475 | -0.954 | +0.372   | 0.000   | 15.000  | 0.75266 | 2000 |
| AS      | 14.660   | 4.932     | 14.625 | +0.051 | -0.973   | 4.000   | 24.000  | 0.80214 | 100  |
|         | 15.582   | 4.742     | 15.763 | -0.106 | -0.762   | 3.000   | 25.000  | 0.80044 | 500  |
|         | 15.302   | 5.053     | 15.669 | -0.127 | -0.853   | 2.000   | 25.000  | 0.82394 | 1000 |
|         | 15.395   | 5.071     | 15.616 | -0.141 | -0.854   | 0.000   | 25.000  | 0.82534 | 2000 |
| MK      | 12.560   | 5.507     | 11.375 | +0.379 | -0.679   | 2.000   | 25.000  | 0.84857 | 100  |
|         | 13.508   | 5.472     | 12.780 | +0.255 | -0.888   | 2.000   | 25.000  | 0.84827 | 500  |
|         | 13.597   | 5.583     | 13.032 | +0.274 | -0.892   | 1.000   | 25.000  | 0.85355 | 1000 |
|         | 13.664   | 5.712     | 12.881 | +0.271 | -0.944   | 1.000   | 25.000  | 0.86310 | 2000 |
| MC      | 16.550   | 3.846     | 16.250 | -0.122 | +0.104   | 6.000   | 25.000  | 0.68098 | 100  |
|         | 15.980   | 4.604     | 16.357 | -0.295 | -0.393   | 2.000   | 25.000  | 0.78309 | 500  |
|         | 15.874   | 4.566     | 16.075 | -0.223 | -0.531   | 0.000   | 25.000  | 0.78016 | 1000 |
|         | 15.778   | 4.664     | 15.957 | -0.274 | -0.415   | 0.000   | 25.000  | 0.78765 | 2000 |
| EI      | 11.350   | 3.831     | 11.200 | -0.148 | -0.490   | 2.000   | 19.000  | 0.75213 | 100  |
|         | 12.020   | 3.466     | 11.907 | +0.038 | -0.487   | 3.000   | 20.000  | 0.69512 | 500  |
|         | 12.068   | 3.513     | 11.846 | +0.113 | -0.632   | 4.000   | 20.000  | 0.70401 | 1000 |
|         | 12.078   | 3.603     | 11.901 | +0.104 | -0.572   | 0.000   | 20.000  | 0.72057 | 2000 |

**Table B-3. Descriptive Statistics of Random Samples of Males, Form 15c**

| Subtest | Standard |           |        |        |          |         |         |         |      |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |
| GS      | 15.740   | 4.679     | 15.214 | +0.119 | -1.027   | 6.000   | 25.000  | 0.80206 | 100  |
|         | 16.190   | 4.477     | 16.321 | -0.192 | -0.511   | 4.000   | 25.000  | 0.79527 | 500  |
|         | 16.093   | 4.613     | 16.152 | -0.123 | -0.566   | 3.000   | 25.000  | 0.80463 | 1000 |
|         | 15.987   | 4.493     | 16.103 | -0.077 | -0.669   | 4.000   | 25.000  | 0.79274 | 2000 |
| AR      | 17.410   | 6.898     | 16.500 | +0.209 | -1.039   | 5.000   | 30.000  | 0.89290 | 100  |
|         | 17.904   | 6.432     | 17.689 | +0.077 | -0.912   | 3.000   | 30.000  | 0.87577 | 500  |
|         | 17.823   | 6.616     | 17.321 | +0.098 | -0.972   | 3.000   | 30.000  | 0.88386 | 1000 |
|         | 17.710   | 6.504     | 17.327 | +0.124 | -0.985   | 4.000   | 30.000  | 0.87882 | 2000 |
| WK      | 26.170   | 5.551     | 26.278 | -0.427 | -0.412   | 12.000  | 35.000  | 0.84449 | 100  |
|         | 26.780   | 5.455     | 27.500 | -0.631 | +0.016   | 8.000   | 35.000  | 0.84739 | 500  |
|         | 26.303   | 5.849     | 26.903 | -0.706 | +0.127   | 7.000   | 35.000  | 0.86363 | 1000 |
|         | 26.851   | 5.668     | 27.801 | -0.835 | +0.470   | 3.000   | 35.000  | 0.86066 | 2000 |
| PC      | 11.030   | 2.630     | 11.333 | -1.100 | +1.310   | 3.000   | 15.000  | 0.66024 | 100  |
|         | 10.980   | 2.877     | 11.586 | -0.839 | +0.159   | 2.000   | 15.000  | 0.71821 | 500  |
|         | 11.087   | 2.784     | 11.704 | -0.894 | +0.378   | 0.000   | 15.000  | 0.70290 | 1000 |
|         | 11.037   | 2.804     | 11.540 | -0.857 | +0.386   | 1.000   | 15.000  | 0.70569 | 2000 |
| AS      | 14.420   | 4.759     | 13.875 | +0.269 | -0.841   | 6.000   | 25.000  | 0.78867 | 100  |
|         | 15.824   | 5.029     | 15.932 | -0.132 | -0.884   | 4.000   | 25.000  | 0.82269 | 500  |
|         | 15.830   | 4.899     | 15.947 | -0.184 | -0.739   | 3.000   | 25.000  | 0.81130 | 1000 |
|         | 15.685   | 4.938     | 15.942 | -0.175 | -0.781   | 0.000   | 25.000  | 0.81481 | 2000 |
| MK      | 12.680   | 5.083     | 11.929 | +0.471 | -0.426   | 3.000   | 24.000  | 0.81336 | 100  |
|         | 13.334   | 5.559     | 12.352 | +0.414 | -0.813   | 3.000   | 25.000  | 0.85119 | 500  |
|         | 13.365   | 5.468     | 12.345 | +0.366 | -0.795   | 0.000   | 25.000  | 0.84836 | 1000 |
|         | 13.470   | 5.509     | 12.560 | +0.381 | -0.807   | 0.000   | 25.000  | 0.85173 | 2000 |
| MC      | 15.200   | 4.956     | 15.625 | -0.290 | -0.620   | 4.000   | 25.000  | 0.80803 | 100  |
|         | 15.100   | 5.076     | 15.130 | -0.082 | -0.769   | 2.000   | 25.000  | 0.81649 | 500  |
|         | 14.991   | 4.951     | 14.815 | -0.045 | -0.776   | 0.000   | 25.000  | 0.80699 | 1000 |
|         | 15.241   | 5.040     | 15.274 | -0.075 | -0.944   | 2.000   | 25.000  | 0.81634 | 2000 |
| EI      | 11.460   | 3.948     | 11.900 | -0.187 | -0.688   | 1.000   | 19.000  | 0.76298 | 100  |
|         | 11.844   | 3.831     | 12.011 | -0.275 | -0.419   | 0.000   | 20.000  | 0.75319 | 500  |
|         | 12.057   | 3.793     | 12.245 | -0.247 | -0.503   | 1.000   | 20.000  | 0.75207 | 1000 |
|         | 11.967   | 3.711     | 12.150 | -0.191 | -0.513   | 0.000   | 20.000  | 0.73868 | 2000 |

**Table B-4. Descriptive Statistics of Random Samples of Males, Form 16a**

| Subtest | Standard |           |        |        |          |         |         |         |      |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |
| GS      | 16.970   | 4.691     | 17.227 | -0.381 | -0.537   | 5.000   | 25.000  | 0.82651 | 100  |
|         | 16.074   | 4.674     | 16.314 | -0.299 | -0.663   | 4.000   | 25.000  | 0.81250 | 500  |
|         | 15.969   | 4.733     | 16.081 | -0.092 | -0.799   | 3.000   | 25.000  | 0.81804 | 1000 |
|         | 16.265   | 4.728     | 16.396 | -0.167 | -0.774   | 2.000   | 25.000  | 0.81955 | 2000 |
| AR      | 18.130   | 5.764     | 18.250 | +0.071 | +0.095   | 1.000   | 30.000  | 0.84587 | 100  |
|         | 18.238   | 6.077     | 17.923 | -0.003 | -0.640   | 2.000   | 30.000  | 0.85884 | 500  |
|         | 18.478   | 6.011     | 18.336 | +0.029 | -0.832   | 3.000   | 30.000  | 0.85678 | 1000 |
|         | 18.323   | 6.116     | 18.077 | +0.022 | -0.762   | 3.000   | 30.000  | 0.86120 | 2000 |
| WK      | 25.340   | 6.504     | 25.875 | -0.439 | -0.910   | 11.000  | 35.000  | 0.88820 | 100  |
|         | 25.656   | 6.137     | 26.321 | -0.512 | -0.366   | 8.000   | 35.000  | 0.87487 | 500  |
|         | 25.932   | 6.260     | 26.875 | -0.646 | -0.191   | 5.000   | 35.000  | 0.88277 | 1000 |
|         | 26.290   | 5.889     | 27.290 | -0.677 | -0.057   | 2.000   | 35.000  | 0.86811 | 2000 |
| PC      | 12.430   | 2.705     | 13.400 | -1.206 | +0.765   | 4.000   | 15.000  | 0.77707 | 100  |
|         | 11.702   | 2.835     | 12.464 | -0.919 | +0.240   | 1.000   | 15.000  | 0.75237 | 500  |
|         | 11.811   | 2.921     | 12.513 | -1.136 | +0.930   | 0.000   | 15.000  | 0.77641 | 1000 |
|         | 11.869   | 2.911     | 12.704 | -1.054 | +0.485   | 0.000   | 15.000  | 0.77801 | 2000 |
| AS      | 14.490   | 5.370     | 14.500 | -0.183 | -0.845   | 3.000   | 25.000  | 0.83879 | 100  |
|         | 15.064   | 5.532     | 15.132 | -0.137 | -0.855   | 0.000   | 25.000  | 0.85079 | 500  |
|         | 15.316   | 5.684     | 15.580 | -0.215 | -0.949   | 0.000   | 25.000  | 0.86317 | 1000 |
|         | 15.270   | 5.685     | 15.647 | -0.177 | -0.995   | 0.000   | 25.000  | 0.86304 | 2000 |
| MK      | 13.480   | 5.835     | 12.300 | +0.348 | -0.861   | 2.000   | 25.000  | 0.87010 | 100  |
|         | 13.680   | 5.807     | 13.000 | +0.279 | -0.903   | 1.000   | 25.000  | 0.86613 | 500  |
|         | 13.523   | 5.796     | 12.321 | +0.394 | -0.853   | 0.000   | 25.000  | 0.86406 | 1000 |
|         | 13.382   | 5.753     | 12.241 | +0.383 | -0.873   | 0.000   | 25.000  | 0.86237 | 2000 |
| MC      | 16.220   | 4.968     | 17.167 | -0.375 | -0.785   | 4.000   | 25.000  | 0.81412 | 100  |
|         | 16.536   | 4.525     | 16.853 | -0.477 | -0.263   | 1.000   | 25.000  | 0.77575 | 500  |
|         | 16.135   | 4.697     | 16.673 | -0.308 | -0.705   | 3.000   | 25.000  | 0.78839 | 1000 |
|         | 15.980   | 4.679     | 16.401 | -0.308 | -0.590   | 3.000   | 25.000  | 0.78429 | 2000 |
| EI      | 12.270   | 4.062     | 12.250 | -0.175 | -0.518   | 3.000   | 20.000  | 0.77862 | 100  |
|         | 12.562   | 4.048     | 12.525 | -0.119 | -0.650   | 1.000   | 20.000  | 0.78258 | 500  |
|         | 12.305   | 3.851     | 12.373 | -0.187 | -0.500   | 0.000   | 20.000  | 0.75622 | 1000 |
|         | 12.462   | 3.896     | 12.469 | -0.134 | -0.624   | 0.000   | 20.000  | 0.76241 | 2000 |

**Table B-5. Descriptive Statistics of Random Samples of Males, Form 16b**

| Subtest | Standard |           |        |        |          |         |         |         |      |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |
| GS      | 15.680   | 4.767     | 15.300 | -0.251 | -0.524   | 3.000   | 24.000  | 0.81697 | 100  |
|         | 16.388   | 4.799     | 16.614 | -0.225 | -0.800   | 3.000   | 25.000  | 0.82605 | 500  |
|         | 16.063   | 4.794     | 16.236 | -0.165 | -0.757   | 3.000   | 25.000  | 0.82161 | 1000 |
|         | 16.261   | 4.825     | 16.556 | -0.256 | -0.752   | 3.000   | 25.000  | 0.82773 | 2000 |
| AR      | 17.370   | 6.449     | 16.500 | +0.383 | -0.865   | 6.000   | 30.000  | 0.87678 | 100  |
|         | 18.366   | 6.800     | 18.239 | +0.003 | -1.092   | 3.000   | 30.000  | 0.89253 | 500  |
|         | 18.267   | 6.667     | 17.895 | +0.069 | -1.071   | 2.000   | 30.000  | 0.88723 | 1000 |
|         | 17.730   | 6.493     | 17.344 | +0.131 | -0.919   | 2.000   | 30.000  | 0.87731 | 2000 |
| WK      | 25.890   | 6.364     | 26.500 | -0.714 | +0.090   | 9.000   | 35.000  | 0.89044 | 100  |
|         | 26.414   | 6.020     | 26.952 | -0.573 | -0.271   | 7.000   | 35.000  | 0.88096 | 500  |
|         | 26.240   | 5.965     | 27.232 | -0.548 | -0.373   | 6.000   | 35.000  | 0.87543 | 1000 |
|         | 26.577   | 5.971     | 27.364 | -0.739 | +0.172   | 5.000   | 35.000  | 0.87934 | 2000 |
| PC      | 11.640   | 2.706     | 12.000 | -0.711 | -0.069   | 4.000   | 15.000  | 0.71488 | 100  |
|         | 11.574   | 2.706     | 12.015 | -0.722 | -0.077   | 2.000   | 15.000  | 0.71783 | 500  |
|         | 11.470   | 2.797     | 12.008 | -0.763 | -0.012   | 1.000   | 15.000  | 0.72887 | 1000 |
|         | 11.491   | 2.795     | 11.988 | -0.873 | +0.436   | 0.000   | 15.000  | 0.73124 | 2000 |
| AS      | 15.330   | 5.902     | 15.375 | -0.230 | -0.907   | 3.000   | 25.000  | 0.87545 | 100  |
|         | 15.202   | 5.726     | 15.500 | -0.146 | -1.032   | 2.000   | 25.000  | 0.86643 | 500  |
|         | 15.218   | 5.619     | 15.623 | -0.157 | -1.045   | 3.000   | 25.000  | 0.85808 | 1000 |
|         | 15.428   | 5.631     | 15.665 | -0.172 | -0.996   | 0.000   | 25.000  | 0.86095 | 2000 |
| MK      | 14.230   | 5.949     | 13.500 | +0.241 | -1.064   | 3.000   | 25.000  | 0.87591 | 100  |
|         | 13.626   | 5.668     | 12.882 | +0.305 | -0.919   | 4.000   | 25.000  | 0.85721 | 500  |
|         | 13.406   | 5.980     | 12.231 | +0.384 | -0.962   | 1.000   | 25.000  | 0.87427 | 1000 |
|         | 13.748   | 5.811     | 12.896 | +0.288 | -0.974   | 1.000   | 25.000  | 0.86755 | 2000 |
| MC      | 16.280   | 4.630     | 16.250 | -0.282 | -0.337   | 2.000   | 25.000  | 0.78468 | 100  |
|         | 15.976   | 4.625     | 16.400 | -0.295 | -0.579   | 0.000   | 25.000  | 0.77819 | 500  |
|         | 16.199   | 4.656     | 16.683 | -0.303 | -0.747   | 2.000   | 25.000  | 0.78516 | 1000 |
|         | 16.146   | 4.557     | 16.494 | -0.293 | -0.603   | 2.000   | 25.000  | 0.77353 | 2000 |
| EI      | 12.960   | 3.782     | 13.000 | -0.258 | -0.305   | 3.000   | 20.000  | 0.74854 | 100  |
|         | 12.676   | 3.848     | 12.929 | -0.231 | -0.519   | 0.000   | 20.000  | 0.75744 | 500  |
|         | 12.537   | 4.022     | 12.560 | -0.181 | -0.581   | 1.000   | 20.000  | 0.78141 | 1000 |
|         | 12.564   | 3.952     | 12.701 | -0.157 | -0.664   | 0.000   | 20.000  | 0.76922 | 2000 |

Table B-6. Descriptive Statistics of Random Samples of Males, Form 17a

| Subtest | Standard |           |        |        |          |         |         |         |      |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |
| GS      | 15.170   | 4.088     | 15.071 | +0.071 | -0.584   | 6.000   | 24.000  | 0.72455 | 100  |
|         | 16.266   | 4.673     | 16.622 | -0.286 | -0.594   | 3.000   | 25.000  | 0.80646 | 500  |
|         | 15.898   | 4.670     | 16.093 | -0.285 | -0.550   | 2.000   | 25.000  | 0.80464 | 1000 |
|         | 16.133   | 4.584     | 16.359 | -0.274 | -0.576   | 2.000   | 25.000  | 0.79725 | 2000 |
| AR      | 17.800   | 6.174     | 17.786 | +0.213 | -0.761   | 7.000   | 30.000  | 0.86299 | 100  |
|         | 17.954   | 6.488     | 17.722 | +0.089 | -0.963   | 4.000   | 30.000  | 0.87672 | 500  |
|         | 18.202   | 6.660     | 18.000 | +0.021 | -0.973   | 2.000   | 30.000  | 0.88589 | 1000 |
|         | 18.065   | 6.537     | 17.942 | +0.045 | -0.947   | 3.000   | 30.000  | 0.87966 | 2000 |
| WK      | 26.190   | 6.669     | 27.333 | -0.587 | -0.567   | 9.000   | 35.000  | 0.89187 | 100  |
|         | 26.154   | 6.556     | 27.500 | -0.668 | -0.289   | 7.000   | 35.000  | 0.89080 | 500  |
|         | 26.001   | 6.524     | 27.036 | -0.622 | -0.257   | 5.000   | 35.000  | 0.88975 | 1000 |
|         | 26.111   | 6.525     | 26.900 | -0.582 | -0.376   | 6.000   | 35.000  | 0.89045 | 2000 |
| PC      | 11.780   | 3.196     | 12.800 | -1.133 | +0.572   | 2.000   | 15.000  | 0.82018 | 100  |
|         | 11.590   | 2.928     | 12.338 | -1.089 | +0.894   | 0.000   | 15.000  | 0.76535 | 500  |
|         | 11.668   | 2.767     | 12.281 | -0.900 | +0.231   | 3.000   | 15.000  | 0.73384 | 1000 |
|         | 11.615   | 2.863     | 12.283 | -0.986 | +0.487   | 0.000   | 15.000  | 0.75168 | 2000 |
| AS      | 15.760   | 5.027     | 15.250 | -0.062 | -0.854   | 4.000   | 25.000  | 0.82324 | 100  |
|         | 15.982   | 5.180     | 16.063 | -0.167 | -0.754   | 0.000   | 25.000  | 0.83613 | 500  |
|         | 15.681   | 5.258     | 15.833 | -0.064 | -0.884   | 0.000   | 25.000  | 0.84135 | 1000 |
|         | 15.845   | 5.288     | 15.836 | -0.140 | -0.818   | 0.000   | 25.000  | 0.84427 | 2000 |
| MK      | 14.100   | 5.825     | 13.333 | +0.237 | -0.985   | 3.000   | 25.000  | 0.86956 | 100  |
|         | 14.090   | 5.634     | 13.438 | +0.217 | -0.877   | 1.000   | 25.000  | 0.86410 | 500  |
|         | 14.034   | 5.381     | 13.276 | +0.258 | -0.812   | 2.000   | 25.000  | 0.84512 | 1000 |
|         | 13.735   | 5.400     | 12.896 | +0.324 | -0.755   | 0.000   | 25.000  | 0.84713 | 2000 |
| MC      | 16.690   | 4.480     | 17.357 | -0.324 | -0.718   | 6.000   | 25.000  | 0.78538 | 100  |
|         | 16.378   | 4.315     | 16.386 | -0.247 | -0.385   | 4.000   | 25.000  | 0.75696 | 500  |
|         | 15.898   | 4.483     | 16.088 | -0.191 | -0.535   | 3.000   | 25.000  | 0.77416 | 1000 |
|         | 16.107   | 4.387     | 16.216 | -0.234 | -0.499   | 0.000   | 25.000  | 0.76523 | 2000 |
| EI      | 11.760   | 3.864     | 11.929 | -0.268 | -0.448   | 2.000   | 19.000  | 0.75969 | 100  |
|         | 12.634   | 3.656     | 12.718 | +0.017 | -0.706   | 3.000   | 20.000  | 0.73366 | 500  |
|         | 12.484   | 3.940     | 12.500 | -0.093 | -0.607   | 0.000   | 20.000  | 0.77568 | 1000 |
|         | 12.470   | 3.965     | 12.510 | -0.099 | -0.564   | 0.000   | 20.000  | 0.77721 | 2000 |

**Table B-7. Descriptive Statistics of Random Samples of Males, Form 17b**

| Subtest | Standard |           |        |        |          |         |         |         |      |  |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|--|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 15.810   | 4.296     | 15.750 | +0.127 | -1.010   | 8.000   | 24.000  | 0.76171 | 100  |  |
|         | 16.128   | 4.616     | 16.283 | -0.188 | -0.574   | 2.000   | 25.000  | 0.79910 | 500  |  |
|         | 16.121   | 4.604     | 16.386 | -0.216 | -0.645   | 3.000   | 25.000  | 0.80199 | 1000 |  |
|         | 16.251   | 4.611     | 16.605 | -0.285 | -0.642   | 2.000   | 25.000  | 0.80215 | 2000 |  |
| AR      | 18.040   | 6.613     | 17.700 | -0.071 | -1.001   | 5.000   | 30.000  | 0.88548 | 100  |  |
|         | 18.440   | 6.442     | 18.457 | -0.069 | -0.936   | 3.000   | 30.000  | 0.88114 | 500  |  |
|         | 18.079   | 6.535     | 18.128 | -0.015 | -0.953   | 2.000   | 30.000  | 0.88246 | 1000 |  |
|         | 17.914   | 6.436     | 18.071 | -0.022 | -0.965   | 3.000   | 30.000  | 0.87677 | 2000 |  |
| WK      | 26.200   | 6.849     | 28.071 | -0.865 | +0.292   | 4.000   | 35.000  | 0.90450 | 100  |  |
|         | 25.978   | 6.483     | 27.214 | -0.621 | -0.446   | 7.000   | 35.000  | 0.89028 | 500  |  |
|         | 26.077   | 6.042     | 27.093 | -0.567 | -0.380   | 8.000   | 35.000  | 0.87191 | 1000 |  |
|         | 26.033   | 6.346     | 27.083 | -0.589 | -0.381   | 7.000   | 35.000  | 0.88522 | 2000 |  |
| PC      | 11.690   | 2.541     | 12.125 | -0.722 | -0.078   | 4.000   | 15.000  | 0.69770 | 100  |  |
|         | 11.648   | 2.711     | 12.176 | -1.028 | +1.087   | 0.000   | 15.000  | 0.74027 | 500  |  |
|         | 11.654   | 2.569     | 12.066 | -0.774 | +0.107   | 2.000   | 15.000  | 0.70373 | 1000 |  |
|         | 11.568   | 2.682     | 12.106 | -0.864 | +0.322   | 2.000   | 15.000  | 0.72576 | 2000 |  |
| AS      | 15.810   | 5.875     | 16.000 | -0.173 | -1.006   | 3.000   | 25.000  | 0.87902 | 100  |  |
|         | 16.078   | 5.096     | 16.014 | -0.185 | -0.725   | 2.000   | 25.000  | 0.83002 | 500  |  |
|         | 15.710   | 5.369     | 15.694 | -0.021 | -0.999   | 3.000   | 25.000  | 0.84748 | 1000 |  |
|         | 15.757   | 5.244     | 15.743 | -0.073 | -0.935   | 0.000   | 25.000  | 0.83898 | 2000 |  |
| MK      | 13.360   | 5.542     | 12.300 | +0.423 | -0.624   | 4.000   | 25.000  | 0.85631 | 100  |  |
|         | 13.316   | 5.404     | 12.579 | +0.348 | -0.753   | 2.000   | 25.000  | 0.84553 | 500  |  |
|         | 13.323   | 5.353     | 12.527 | +0.390 | -0.651   | 0.000   | 25.000  | 0.84119 | 1000 |  |
|         | 13.540   | 5.324     | 12.727 | +0.358 | -0.677   | 1.000   | 25.000  | 0.83979 | 2000 |  |
| MC      | 16.060   | 4.724     | 16.100 | -0.244 | -0.625   | 5.000   | 25.000  | 0.80074 | 100  |  |
|         | 16.184   | 4.483     | 16.289 | -0.226 | -0.550   | 2.000   | 25.000  | 0.77924 | 500  |  |
|         | 16.172   | 4.487     | 16.401 | -0.288 | -0.468   | 2.000   | 25.000  | 0.77640 | 1000 |  |
|         | 16.092   | 4.457     | 16.331 | -0.268 | -0.524   | 0.000   | 25.000  | 0.77234 | 2000 |  |
| EI      | 12.430   | 4.164     | 12.400 | -0.007 | -0.685   | 3.000   | 20.000  | 0.80143 | 100  |  |
|         | 12.448   | 3.876     | 12.326 | +0.003 | -0.610   | 2.000   | 20.000  | 0.76338 | 500  |  |
|         | 11.859   | 4.003     | 11.681 | +0.011 | -0.658   | 0.000   | 20.000  | 0.77713 | 1000 |  |
|         | 12.089   | 3.939     | 11.994 | +0.005 | -0.746   | 1.000   | 20.000  | 0.76901 | 2000 |  |

Table B-8. Descriptive Statistics of Random Samples of Females, Form 15a

| Subtest | Standard |           |        |        |          |         |         |         |      |  |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|--|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 15.290   | 3.663     | 15.375 | -0.256 | +0.613   | 5.000   | 25.000  | 0.68622 | 100  |  |
|         | 14.970   | 4.198     | 14.826 | +0.116 | -0.544   | 4.000   | 25.000  | 0.75801 | 500  |  |
|         | 14.667   | 4.016     | 14.397 | +0.129 | -0.372   | 4.000   | 25.000  | 0.73290 | 1000 |  |
|         | 14.677   | 4.058     | 14.396 | +0.159 | -0.392   | 2.000   | 25.000  | 0.73789 | 2000 |  |
| AR      | 16.870   | 5.608     | 15.900 | +0.304 | -0.568   | 7.000   | 30.000  | 0.83211 | 100  |  |
|         | 16.692   | 5.838     | 15.894 | +0.393 | -0.555   | 4.000   | 30.000  | 0.84193 | 500  |  |
|         | 16.831   | 5.649     | 16.203 | +0.299 | -0.492   | 3.000   | 30.000  | 0.82981 | 1000 |  |
|         | 16.818   | 5.723     | 16.084 | +0.369 | -0.579   | 3.000   | 30.000  | 0.83451 | 2000 |  |
| WK      | 24.910   | 6.581     | 26.000 | -0.534 | -0.657   | 9.000   | 35.000  | 0.88420 | 100  |  |
|         | 25.708   | 6.522     | 26.844 | -0.641 | -0.184   | 3.000   | 35.000  | 0.88671 | 500  |  |
|         | 25.565   | 6.564     | 26.725 | -0.623 | -0.317   | 5.000   | 35.000  | 0.88811 | 1000 |  |
|         | 25.533   | 6.618     | 26.628 | -0.618 | -0.300   | 3.000   | 35.000  | 0.88971 | 2000 |  |
| PC      | 12.270   | 2.356     | 12.767 | -1.007 | +0.467   | 5.000   | 15.000  | 0.68085 | 100  |  |
|         | 12.360   | 2.371     | 12.909 | -1.290 | +2.009   | 1.000   | 15.000  | 0.70215 | 500  |  |
|         | 12.298   | 2.466     | 12.936 | -1.126 | +1.006   | 1.000   | 15.000  | 0.71691 | 1000 |  |
|         | 12.281   | 2.385     | 12.820 | -1.148 | +1.263   | 1.000   | 15.000  | 0.69492 | 2000 |  |
| AS      | 10.330   | 3.458     | 9.875  | +0.378 | -0.150   | 2.000   | 19.000  | 0.57631 | 100  |  |
|         | 9.948    | 3.455     | 9.632  | +0.542 | +0.736   | 2.000   | 23.000  | 0.57712 | 500  |  |
|         | 9.955    | 3.323     | 9.726  | +0.397 | +0.158   | 0.000   | 22.000  | 0.53224 | 1000 |  |
|         | 9.854    | 3.369     | 9.533  | +0.538 | +0.472   | 0.000   | 23.000  | 0.55240 | 2000 |  |
| MK      | 13.790   | 5.317     | 13.071 | +0.306 | -0.624   | 0.000   | 25.000  | 0.84185 | 100  |  |
|         | 13.776   | 5.107     | 13.179 | +0.178 | -0.772   | 0.000   | 25.000  | 0.82294 | 500  |  |
|         | 14.068   | 5.011     | 13.635 | +0.232 | -0.636   | 0.000   | 25.000  | 0.81870 | 1000 |  |
|         | 14.036   | 5.132     | 13.582 | +0.225 | -0.721   | 0.000   | 25.000  | 0.82747 | 2000 |  |
| MC      | 11.640   | 4.225     | 11.333 | +0.245 | -0.609   | 4.000   | 22.000  | 0.71086 | 100  |  |
|         | 12.062   | 4.091     | 11.755 | +0.253 | -0.322   | 2.000   | 24.000  | 0.68674 | 500  |  |
|         | 12.204   | 4.134     | 11.988 | +0.274 | -0.366   | 2.000   | 23.000  | 0.69232 | 1000 |  |
|         | 12.246   | 4.058     | 12.054 | +0.174 | -0.299   | 0.000   | 24.000  | 0.68176 | 2000 |  |
| EI      | 10.010   | 3.083     | 9.654  | +0.153 | +0.682   | 0.000   | 18.000  | 0.58201 | 100  |  |
|         | 9.402    | 2.588     | 9.402  | +0.075 | +0.188   | 0.000   | 18.000  | 0.37767 | 500  |  |
|         | 9.382    | 2.855     | 9.215  | +0.334 | +0.485   | 0.000   | 20.000  | 0.50266 | 1000 |  |
|         | 9.262    | 2.707     | 9.128  | +0.276 | +0.547   | 0.000   | 20.000  | 0.44087 | 2000 |  |

**Table B-9. Descriptive Statistics of Random Samples of Females, Form 15b**

|         |        | Standard |           |        |        |          |         |         |       |   |
|---------|--------|----------|-----------|--------|--------|----------|---------|---------|-------|---|
| Subtest |        | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20 | N |
| GS      | 14.750 | 3.846    | 14.591    | +0.138 | -0.851 | 7.000    | 23.000  | 0.70551 | 100   |   |
|         | 15.092 | 4.109    | 15.023    | +0.041 | -0.328 | 3.000    | 25.000  | 0.74880 | 500   |   |
|         | 14.648 | 4.010    | 14.401    | +0.179 | -0.327 | 3.000    | 25.000  | 0.72772 | 1000  |   |
|         | 14.765 | 4.006    | 14.573    | +0.122 | -0.298 | 3.000    | 25.000  | 0.72998 | 2000  |   |
| AR      | 17.000 | 6.348    | 16.900    | +0.098 | -0.993 | 6.000    | 29.000  | 0.87340 | 100   |   |
|         | 17.208 | 6.012    | 16.700    | +0.220 | -0.816 | 5.000    | 30.000  | 0.85741 | 500   |   |
|         | 16.675 | 6.083    | 15.913    | +0.325 | -0.837 | 4.000    | 30.000  | 0.85934 | 1000  |   |
|         | 16.974 | 5.938    | 16.471    | +0.285 | -0.771 | 4.000    | 30.000  | 0.85252 | 2000  |   |
| WK      | 25.870 | 6.165    | 26.500    | -0.566 | -0.425 | 10.000   | 35.000  | 0.87110 | 100   |   |
|         | 26.292 | 5.737    | 27.136    | -0.488 | -0.545 | 10.000   | 35.000  | 0.85647 | 500   |   |
|         | 26.270 | 5.442    | 26.924    | -0.478 | -0.318 | 8.000    | 35.000  | 0.83776 | 1000  |   |
|         | 26.120 | 5.625    | 26.770    | -0.456 | -0.431 | 8.000    | 35.000  | 0.84751 | 2000  |   |
| PC      | 12.200 | 2.391    | 12.583    | -0.789 | +0.299 | 4.000    | 15.000  | 0.68958 | 100   |   |
|         | 12.046 | 2.476    | 12.554    | -1.074 | +0.845 | 4.000    | 15.000  | 0.70399 | 500   |   |
|         | 11.997 | 2.515    | 12.505    | -1.069 | +0.985 | 2.000    | 15.000  | 0.70737 | 1000  |   |
|         | 12.028 | 2.480    | 12.550    | -1.064 | +0.897 | 2.000    | 15.000  | 0.70105 | 2000  |   |
| AS      | 9.810  | 3.212    | 9.591     | +0.293 | +0.030 | 2.000    | 18.000  | 0.50236 | 100   |   |
|         | 9.696  | 3.428    | 9.373     | +0.518 | +0.336 | 2.000    | 23.000  | 0.56678 | 500   |   |
|         | 9.757  | 3.388    | 9.539     | +0.521 | +0.529 | 0.000    | 22.000  | 0.55643 | 1000  |   |
|         | 9.772  | 3.454    | 9.508     | +0.548 | +0.495 | 0.000    | 24.000  | 0.57421 | 2000  |   |
| MK      | 13.790 | 4.837    | 13.389    | +0.253 | -0.665 | 5.000    | 25.000  | 0.79758 | 100   |   |
|         | 13.770 | 4.963    | 13.583    | +0.237 | -0.348 | 0.000    | 25.000  | 0.81202 | 500   |   |
|         | 13.797 | 5.205    | 13.515    | +0.192 | -0.761 | 0.000    | 25.000  | 0.83293 | 1000  |   |
|         | 13.708 | 5.116    | 13.350    | +0.214 | -0.672 | 0.000    | 25.000  | 0.82499 | 2000  |   |
| MC      | 11.940 | 4.045    | 11.875    | +0.289 | -0.059 | 4.000    | 22.000  | 0.67291 | 100   |   |
|         | 12.166 | 4.242    | 11.865    | +0.365 | -0.204 | 3.000    | 25.000  | 0.70854 | 500   |   |
|         | 12.005 | 4.086    | 11.700    | +0.277 | -0.113 | 0.000    | 25.000  | 0.68351 | 1000  |   |
|         | 11.996 | 4.106    | 11.704    | +0.297 | -0.218 | 0.000    | 25.000  | 0.68732 | 2000  |   |
| EI      | 9.160  | 2.820    | 8.786     | +0.479 | -0.190 | 4.000    | 17.000  | 0.48044 | 100   |   |
|         | 9.210  | 2.625    | 8.948     | +0.536 | +0.264 | 3.000    | 18.000  | 0.40282 | 500   |   |
|         | 9.261  | 2.697    | 9.107     | +0.435 | +0.370 | 0.000    | 19.000  | 0.43591 | 1000  |   |
|         | 9.259  | 2.720    | 9.079     | +0.399 | +0.438 | 0.000    | 20.000  | 0.44644 | 2000  |   |

**Table B-10. Descriptive Statistics of Random Samples of Females, Form 15c**

| Subtest | Standard |           |        |        |          |         |         |         |      |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |
| GS      | 14.430   | 4.103     | 14.115 | +0.458 | -0.404   | 7.000   | 25.000  | 0.73749 | 100  |
|         | 14.202   | 4.052     | 13.981 | +0.166 | -0.282   | 4.000   | 25.000  | 0.72479 | 500  |
|         | 14.302   | 3.803     | 14.255 | +0.114 | -0.212   | 5.000   | 25.000  | 0.68303 | 1000 |
|         | 14.192   | 3.919     | 14.031 | +0.160 | -0.262   | 3.000   | 25.000  | 0.70226 | 2000 |
| AR      | 16.010   | 5.627     | 15.000 | +0.512 | -0.183   | 5.000   | 30.000  | 0.82819 | 100  |
|         | 16.046   | 5.796     | 15.382 | +0.357 | -0.557   | 3.000   | 30.000  | 0.84060 | 500  |
|         | 15.914   | 5.922     | 15.353 | +0.375 | -0.485   | 3.000   | 30.000  | 0.84772 | 1000 |
|         | 16.061   | 5.879     | 15.478 | +0.367 | -0.540   | 3.000   | 30.000  | 0.84599 | 2000 |
| WK      | 26.070   | 5.571     | 27.000 | -0.518 | -0.134   | 11.000  | 35.000  | 0.84410 | 100  |
|         | 26.092   | 5.906     | 26.944 | -0.447 | -0.607   | 9.000   | 35.000  | 0.86256 | 500  |
|         | 26.309   | 5.775     | 26.893 | -0.518 | -0.366   | 9.000   | 35.000  | 0.85995 | 1000 |
|         | 26.089   | 5.835     | 26.645 | -0.509 | -0.286   | 0.000   | 35.000  | 0.85975 | 2000 |
| PC      | 11.480   | 2.355     | 11.833 | -0.775 | +0.547   | 4.000   | 15.000  | 0.60828 | 100  |
|         | 11.182   | 2.504     | 11.574 | -0.810 | +0.306   | 2.000   | 15.000  | 0.63114 | 500  |
|         | 11.452   | 2.439     | 11.827 | -0.934 | +0.929   | 0.000   | 15.000  | 0.62737 | 1000 |
|         | 11.340   | 2.515     | 11.770 | -0.881 | +0.632   | 0.000   | 15.000  | 0.64618 | 2000 |
| AS      | 10.500   | 3.886     | 10.136 | +0.414 | -0.428   | 4.000   | 22.000  | 0.67177 | 100  |
|         | 10.388   | 3.634     | 9.877  | +0.597 | +0.416   | 0.000   | 23.000  | 0.61959 | 500  |
|         | 10.704   | 3.638     | 10.372 | +0.451 | +0.007   | 2.000   | 24.000  | 0.61528 | 1000 |
|         | 10.617   | 3.660     | 10.226 | +0.538 | +0.261   | 0.000   | 25.000  | 0.62020 | 2000 |
| MK      | 12.550   | 5.799     | 11.700 | +0.319 | -0.929   | 0.000   | 25.000  | 0.86975 | 100  |
|         | 13.708   | 5.309     | 13.311 | +0.223 | -0.774   | 0.000   | 25.000  | 0.84092 | 500  |
|         | 13.417   | 5.418     | 12.852 | +0.285 | -0.777   | 2.000   | 25.000  | 0.84685 | 1000 |
|         | 13.699   | 5.266     | 13.209 | +0.177 | -0.809   | 0.000   | 25.000  | 0.83653 | 2000 |
| MC      | 11.340   | 4.131     | 11.318 | +0.346 | -0.733   | 4.000   | 21.000  | 0.68716 | 100  |
|         | 11.696   | 4.302     | 11.208 | +0.318 | -0.320   | 0.000   | 25.000  | 0.71707 | 500  |
|         | 11.366   | 3.911     | 10.948 | +0.367 | -0.281   | 0.000   | 23.000  | 0.65335 | 1000 |
|         | 11.530   | 4.069     | 11.038 | +0.452 | -0.141   | 0.000   | 25.000  | 0.68317 | 2000 |
| EI      | 8.900    | 3.492     | 8.773  | +0.634 | +1.353   | 2.000   | 20.000  | 0.67756 | 100  |
|         | 9.012    | 3.351     | 8.777  | +0.323 | +0.090   | 0.000   | 20.000  | 0.64415 | 500  |
|         | 9.139    | 3.307     | 8.876  | +0.283 | +0.011   | 0.000   | 20.000  | 0.63387 | 1000 |
|         | 9.049    | 3.235     | 8.856  | +0.270 | +0.006   | 0.000   | 20.000  | 0.61623 | 2000 |

**Table B-11. Descriptive Statistics of Random Samples of Females, Form 16a**

| Subtest | Standard |           |        |        |          |         |         |         |      |  |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|--|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 14.570   | 4.379     | 14.929 | -0.081 | -1.023   | 6.000   | 23.000  | 0.76732 | 100  |  |
|         | 15.160   | 4.523     | 14.763 | +0.067 | -0.575   | 4.000   | 25.000  | 0.79311 | 500  |  |
|         | 14.884   | 4.502     | 14.863 | -0.001 | -0.541   | 2.000   | 25.000  | 0.78747 | 1000 |  |
|         | 15.018   | 4.475     | 15.101 | -0.045 | -0.574   | 2.000   | 25.000  | 0.78642 | 2000 |  |
| AR      | 17.840   | 5.037     | 17.667 | -0.052 | -0.292   | 5.000   | 29.000  | 0.78967 | 100  |  |
|         | 17.144   | 5.435     | 17.000 | +0.149 | -0.541   | 3.000   | 30.000  | 0.81093 | 500  |  |
|         | 16.914   | 5.656     | 16.759 | +0.129 | -0.613   | 3.000   | 30.000  | 0.82764 | 1000 |  |
|         | 17.206   | 5.513     | 17.088 | +0.105 | -0.526   | 3.000   | 30.000  | 0.81819 | 2000 |  |
| WK      | 26.100   | 6.114     | 26.667 | -0.554 | -0.433   | 11.000  | 35.000  | 0.87439 | 100  |  |
|         | 26.388   | 5.719     | 27.147 | -0.523 | -0.386   | 9.000   | 35.000  | 0.85856 | 500  |  |
|         | 25.999   | 5.960     | 26.759 | -0.521 | -0.439   | 8.000   | 35.000  | 0.86892 | 1000 |  |
|         | 26.291   | 5.831     | 27.257 | -0.605 | -0.285   | 8.000   | 35.000  | 0.86493 | 2000 |  |
| PC      | 12.070   | 2.694     | 12.850 | -1.281 | +1.459   | 3.000   | 15.000  | 0.74535 | 100  |  |
|         | 12.036   | 2.692     | 12.644 | -1.300 | +1.650   | 2.000   | 15.000  | 0.74637 | 500  |  |
|         | 12.095   | 2.624     | 12.740 | -1.231 | +1.464   | 1.000   | 15.000  | 0.73843 | 1000 |  |
|         | 12.193   | 2.581     | 12.342 | -1.225 | +1.386   | 1.000   | 15.000  | 0.73424 | 2000 |  |
| AS      | 8.400    | 4.447     | 7.722  | +0.974 | +0.983   | 1.000   | 23.000  | 0.77062 | 100  |  |
|         | 8.606    | 3.799     | 8.032  | +0.727 | +0.717   | 0.000   | 24.000  | 0.66862 | 500  |  |
|         | 8.555    | 3.721     | 8.126  | +0.647 | +0.423   | 0.000   | 23.000  | 0.65452 | 1000 |  |
|         | 8.527    | 3.769     | 8.077  | +0.616 | +0.267   | 0.000   | 24.000  | 0.66665 | 2000 |  |
| MK      | 13.910   | 4.593     | 13.409 | +0.281 | -0.467   | 5.000   | 24.000  | 0.78017 | 100  |  |
|         | 13.868   | 5.386     | 13.139 | +0.287 | -0.751   | 1.000   | 25.000  | 0.84287 | 500  |  |
|         | 13.947   | 5.201     | 13.567 | +0.175 | -0.829   | 1.000   | 25.000  | 0.83041 | 1000 |  |
|         | 14.043   | 5.250     | 13.591 | +0.236 | -0.836   | 3.000   | 25.000  | 0.83418 | 2000 |  |
| MC      | 12.930   | 4.098     | 13.167 | -0.032 | -0.713   | 4.000   | 22.000  | 0.68472 | 100  |  |
|         | 12.802   | 4.294     | 12.622 | +0.221 | -0.389   | 0.000   | 24.000  | 0.71486 | 500  |  |
|         | 12.630   | 4.076     | 12.489 | +0.074 | -0.400   | 0.000   | 24.000  | 0.67932 | 1000 |  |
|         | 12.831   | 4.164     | 12.678 | +0.175 | -0.436   | 0.000   | 25.000  | 0.69550 | 2000 |  |
| EI      | 10.030   | 3.515     | 10.000 | +0.081 | -0.331   | 2.000   | 19.000  | 0.66630 | 100  |  |
|         | 9.260    | 3.233     | 9.156  | +0.207 | -0.125   | 0.000   | 19.000  | 0.60460 | 500  |  |
|         | 9.409    | 3.120     | 9.326  | +0.136 | -0.163   | 0.000   | 19.000  | 0.57044 | 1000 |  |
|         | 9.358    | 3.067     | 9.287  | +0.183 | -0.148   | 0.000   | 19.000  | 0.55534 | 2000 |  |

**Table B-12. Descriptive Statistics of Random Samples of Females, Form 16b**

| Subtest | Standard |           |        |        |          |         |         |         |      |  |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|--|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 14.870   | 4.355     | 14.750 | +0.041 | -0.239   | 5.000   | 25.000  | 0.77420 | 100  |  |
|         | 15.004   | 4.478     | 14.864 | +0.026 | -0.633   | 5.000   | 25.000  | 0.78837 | 500  |  |
|         | 14.802   | 4.427     | 14.669 | +0.077 | -0.605   | 4.000   | 25.000  | 0.78312 | 1000 |  |
|         | 14.951   | 4.424     | 14.825 | +0.054 | -0.670   | 4.000   | 25.000  | 0.78304 | 2000 |  |
| AR      | 17.480   | 5.615     | 17.250 | +0.163 | -0.962   | 8.000   | 28.000  | 0.82879 | 100  |  |
|         | 16.534   | 5.895     | 15.786 | +0.336 | -0.607   | 3.000   | 30.000  | 0.84478 | 500  |  |
|         | 16.998   | 5.893     | 16.518 | +0.193 | -0.725   | 3.000   | 30.000  | 0.84637 | 1000 |  |
|         | 16.951   | 5.837     | 16.375 | +0.248 | -0.716   | 3.000   | 30.000  | 0.84264 | 2000 |  |
| WK      | 26.380   | 5.981     | 27.300 | -0.762 | +0.238   | 7.000   | 35.000  | 0.87585 | 100  |  |
|         | 27.064   | 5.237     | 27.525 | -0.588 | -0.210   | 6.000   | 35.000  | 0.84578 | 500  |  |
|         | 26.977   | 5.207     | 27.482 | -0.627 | +0.219   | 6.000   | 35.000  | 0.84148 | 1000 |  |
|         | 26.973   | 5.271     | 27.542 | -0.619 | +0.167   | 5.000   | 35.000  | 0.84558 | 2000 |  |
| PC      | 11.770   | 2.752     | 12.300 | -0.817 | +0.389   | 2.000   | 15.000  | 0.74366 | 100  |  |
|         | 12.142   | 2.297     | 12.626 | -0.909 | +0.652   | 3.000   | 15.000  | 0.63843 | 500  |  |
|         | 12.061   | 2.367     | 12.523 | -0.881 | +0.446   | 3.000   | 15.000  | 0.65658 | 1000 |  |
|         | 12.058   | 2.426     | 12.518 | -0.945 | +0.701   | 2.000   | 15.000  | 0.67467 | 2000 |  |
| AS      | 7.670    | 3.590     | 6.955  | +0.574 | -0.351   | 2.000   | 17.000  | 0.64175 | 100  |  |
|         | 8.374    | 3.666     | 7.992  | +0.622 | +0.372   | 1.000   | 22.000  | 0.64540 | 500  |  |
|         | 8.448    | 3.768     | 7.926  | +0.530 | -0.047   | 0.000   | 21.000  | 0.66523 | 1000 |  |
|         | 8.483    | 3.741     | 7.977  | +0.632 | +0.303   | 0.000   | 23.000  | 0.65920 | 2000 |  |
| MK      | 14.110   | 5.606     | 13.600 | +0.371 | -0.960   | 5.000   | 25.000  | 0.85588 | 100  |  |
|         | 13.966   | 5.230     | 13.534 | +0.209 | -0.845   | 3.000   | 25.000  | 0.83082 | 500  |  |
|         | 14.157   | 5.239     | 13.844 | +0.208 | -0.908   | 4.000   | 25.000  | 0.83437 | 1000 |  |
|         | 13.976   | 5.258     | 13.693 | +0.186 | -0.871   | 3.000   | 25.000  | 0.83423 | 2000 |  |
| MC      | 12.500   | 3.700     | 12.722 | -0.136 | -0.592   | 3.000   | 20.000  | 0.59837 | 100  |  |
|         | 13.032   | 4.084     | 12.628 | +0.251 | -0.374   | 0.000   | 24.000  | 0.68134 | 500  |  |
|         | 12.695   | 4.147     | 12.476 | +0.258 | -0.387   | 2.000   | 25.000  | 0.69178 | 1000 |  |
|         | 12.720   | 4.152     | 12.456 | +0.252 | -0.361   | 0.000   | 25.000  | 0.69178 | 2000 |  |
| EI      | 9.340    | 3.500     | 9.000  | +0.444 | +0.652   | 1.000   | 20.000  | 0.66583 | 100  |  |
|         | 9.230    | 3.201     | 9.036  | +0.268 | -0.052   | 1.000   | 19.000  | 0.59766 | 500  |  |
|         | 9.399    | 3.289     | 9.267  | +0.313 | -0.011   | 1.000   | 20.000  | 0.62011 | 1000 |  |
|         | 9.358    | 3.191     | 9.194  | +0.332 | -0.025   | 1.000   | 20.000  | 0.59275 | 2000 |  |

**Table B-13. Descriptive Statistics of Random Samples of Females, Form 17a**

| Subtest | Standard |           |        |        |          |         |         |         |      |  |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|--|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 14.120   | 4.115     | 13.700 | -0.052 | -0.328   | 5.000   | 23.000  | 0.70930 | 100  |  |
|         | 14.454   | 4.344     | 14.656 | -0.142 | -0.534   | 2.000   | 25.000  | 0.74969 | 500  |  |
|         | 14.592   | 4.412     | 14.715 | -0.091 | -0.653   | 2.000   | 25.000  | 0.75768 | 1000 |  |
|         | 14.490   | 4.291     | 14.543 | -0.073 | -0.594   | 2.000   | 25.000  | 0.74060 | 2000 |  |
| AR      | 16.840   | 6.786     | 16.000 | +0.239 | -1.162   | 6.000   | 30.000  | 0.88466 | 100  |  |
|         | 16.740   | 6.450     | 16.352 | +0.165 | -0.884   | 3.000   | 30.000  | 0.87148 | 500  |  |
|         | 16.677   | 6.114     | 16.245 | +0.237 | -0.775   | 3.000   | 30.000  | 0.85563 | 1000 |  |
|         | 16.764   | 6.243     | 16.279 | +0.250 | -0.811   | 3.000   | 30.000  | 0.86305 | 2000 |  |
| WK      | 25.490   | 6.325     | 26.500 | -0.436 | -0.656   | 8.000   | 35.000  | 0.87651 | 100  |  |
|         | 25.648   | 6.189     | 25.860 | -0.429 | -0.408   | 6.000   | 35.000  | 0.87410 | 500  |  |
|         | 26.110   | 6.132     | 26.731 | -0.554 | -0.223   | 6.000   | 35.000  | 0.87418 | 1000 |  |
|         | 25.829   | 6.057     | 26.363 | -0.480 | -0.355   | 6.000   | 35.000  | 0.86858 | 2000 |  |
| PC      | 12.270   | 2.322     | 12.813 | -0.755 | -0.314   | 6.000   | 15.000  | 0.65838 | 100  |  |
|         | 12.112   | 2.468     | 12.728 | -0.990 | +0.506   | 3.000   | 15.000  | 0.69290 | 500  |  |
|         | 12.158   | 2.465     | 12.694 | -1.105 | +1.304   | 0.000   | 15.000  | 0.69607 | 1000 |  |
|         | 12.107   | 2.481     | 12.674 | -1.058 | +0.989   | 0.000   | 15.000  | 0.69711 | 2000 |  |
| AS      | 10.640   | 3.436     | 10.625 | +0.432 | +0.500   | 3.000   | 20.000  | 0.57615 | 100  |  |
|         | 10.070   | 3.688     | 9.711  | +0.537 | +0.251   | 2.000   | 23.000  | 0.62555 | 500  |  |
|         | 9.927    | 3.460     | 9.650  | +0.520 | +0.437   | 0.000   | 22.000  | 0.57305 | 1000 |  |
|         | 10.061   | 3.594     | 9.712  | +0.599 | +0.453   | 2.000   | 24.000  | 0.60557 | 2000 |  |
| MK      | 13.790   | 4.685     | 13.278 | +0.306 | -0.233   | 3.000   | 25.000  | 0.79874 | 100  |  |
|         | 14.048   | 5.008     | 13.826 | +0.133 | -0.710   | 3.000   | 25.000  | 0.82059 | 500  |  |
|         | 14.139   | 5.110     | 13.766 | +0.185 | -0.849   | 2.000   | 25.000  | 0.83068 | 1000 |  |
|         | 14.058   | 5.007     | 13.606 | +0.186 | -0.713   | 1.000   | 25.000  | 0.82271 | 2000 |  |
| MC      | 13.150   | 3.854     | 13.000 | +0.313 | -0.496   | 6.000   | 23.000  | 0.65567 | 100  |  |
|         | 12.936   | 3.876     | 12.783 | +0.153 | -0.300   | 4.000   | 23.000  | 0.66217 | 500  |  |
|         | 12.882   | 3.968     | 12.657 | +0.147 | -0.303   | 2.000   | 25.000  | 0.67586 | 1000 |  |
|         | 12.885   | 3.852     | 12.749 | +0.152 | -0.187   | 2.000   | 25.000  | 0.65563 | 2000 |  |
| E1      | 9.670    | 2.663     | 9.278  | +0.134 | -0.148   | 3.000   | 16.000  | 0.42920 | 100  |  |
|         | 9.116    | 3.021     | 8.880  | +0.449 | +0.325   | 2.000   | 19.000  | 0.54942 | 500  |  |
|         | 9.010    | 3.011     | 8.803  | +0.391 | +0.234   | 1.000   | 20.000  | 0.54980 | 1000 |  |
|         | 9.113    | 3.038     | 8.898  | +0.445 | +0.283   | 1.000   | 20.000  | 0.56039 | 2000 |  |

**Table B-14. Descriptive Statistics of Random Samples of Females, Form 17b**

| Subtest | Standard |           |        |        |          |         |         |         |      |  |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|--|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 14.540   | 4.111     | 14.375 | +0.205 | -0.204   | 5.000   | 25.000  | 0.71550 | 100  |  |
|         | 15.066   | 4.283     | 15.014 | -0.091 | -0.334   | 1.000   | 24.000  | 0.74462 | 500  |  |
|         | 14.790   | 4.227     | 14.770 | +0.002 | -0.528   | 3.000   | 25.000  | 0.73591 | 1000 |  |
|         | 14.792   | 4.255     | 14.805 | -0.054 | -0.480   | 1.000   | 25.000  | 0.73849 | 2000 |  |
| AR      | 16.360   | 5.972     | 16.100 | +0.259 | -0.623   | 4.000   | 29.000  | 0.84890 | 100  |  |
|         | 16.182   | 6.111     | 16.016 | +0.237 | -0.704   | 2.000   | 30.000  | 0.85639 | 500  |  |
|         | 16.494   | 6.026     | 16.000 | +0.219 | -0.727   | 2.000   | 30.000  | 0.85301 | 1000 |  |
|         | 16.529   | 5.904     | 16.156 | +0.223 | -0.638   | 2.000   | 30.000  | 0.84677 | 2000 |  |
| WK      | 29.010   | 5.281     | 30.125 | -1.156 | +1.395   | 10.000  | 35.000  | 0.87129 | 100  |  |
|         | 27.222   | 5.876     | 28.526 | -0.715 | -0.140   | 10.000  | 35.000  | 0.87552 | 500  |  |
|         | 26.931   | 5.954     | 28.049 | -0.701 | -0.102   | 3.000   | 35.000  | 0.87759 | 1000 |  |
|         | 27.033   | 5.891     | 28.040 | -0.670 | -0.173   | 3.000   | 35.000  | 0.87532 | 2000 |  |
| PC      | 12.070   | 2.271     | 12.147 | -0.648 | +0.174   | 5.000   | 15.000  | 0.67663 | 100  |  |
|         | 11.960   | 2.259     | 12.248 | -1.053 | +1.702   | 2.000   | 15.000  | 0.66190 | 500  |  |
|         | 11.955   | 2.168     | 12.204 | -0.888 | +1.152   | 3.000   | 15.000  | 0.62474 | 1000 |  |
|         | 11.932   | 2.190     | 12.193 | -0.850 | +1.012   | 2.000   | 15.000  | 0.63070 | 2000 |  |
| AS      | 10.720   | 3.635     | 10.188 | +0.390 | -0.569   | 4.000   | 19.000  | 0.60862 | 100  |  |
|         | 9.836    | 3.572     | 9.675  | +0.268 | -0.203   | 1.000   | 20.000  | 0.59853 | 500  |  |
|         | 9.826    | 3.563     | 9.412  | +0.548 | +0.421   | 1.000   | 23.000  | 0.59509 | 1000 |  |
|         | 9.930    | 3.640     | 9.538  | +0.535 | +0.212   | 0.000   | 23.000  | 0.61326 | 2000 |  |
| MK      | 14.080   | 5.096     | 13.600 | +0.324 | -0.831   | 5.000   | 25.000  | 0.83492 | 100  |  |
|         | 14.124   | 5.131     | 13.833 | +0.096 | -0.768   | 0.000   | 25.000  | 0.83483 | 500  |  |
|         | 14.154   | 4.976     | 13.828 | +0.174 | -0.725   | 3.000   | 25.000  | 0.82025 | 1000 |  |
|         | 13.992   | 4.982     | 13.570 | +0.207 | -0.729   | 0.000   | 25.000  | 0.81963 | 2000 |  |
| MC      | 12.720   | 3.613     | 12.921 | +0.020 | +0.097   | 4.000   | 22.000  | 0.60988 | 100  |  |
|         | 12.892   | 3.690     | 12.658 | +0.126 | -0.077   | 0.000   | 24.000  | 0.62050 | 500  |  |
|         | 12.757   | 3.808     | 12.588 | +0.271 | -0.139   | 3.000   | 24.000  | 0.64574 | 1000 |  |
|         | 12.811   | 3.819     | 12.591 | +0.162 | -0.131   | 0.000   | 25.000  | 0.64862 | 2000 |  |
| EI      | 8.870    | 2.970     | 8.667  | +0.325 | +0.092   | 3.000   | 18.000  | 0.53384 | 100  |  |
|         | 9.112    | 3.047     | 9.074  | +0.264 | +0.194   | 0.000   | 20.000  | 0.56516 | 500  |  |
|         | 8.966    | 3.081     | 8.821  | +0.354 | +0.164   | 0.000   | 20.000  | 0.57147 | 1000 |  |
|         | 8.982    | 3.104     | 8.785  | +0.393 | +0.200   | 0.000   | 20.000  | 0.57819 | 2000 |  |

**Table B-15. Descriptive Statistics of Random Samples of Whites, Form 15a**

|         |        | Standard  |        |        |          |         |         |         |      |  |
|---------|--------|-----------|--------|--------|----------|---------|---------|---------|------|--|
| Subtest | Mean   | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 17.590 | 4.395     | 18.333 | -0.775 | +0.561   | 4.000   | 25.000  | 0.80345 | 100  |  |
|         | 17.182 | 4.377     | 17.500 | -0.426 | -0.324   | 4.000   | 25.000  | 0.79434 | 500  |  |
|         | 17.343 | 4.181     | 17.547 | -0.251 | -0.568   | 4.000   | 25.000  | 0.77726 | 1000 |  |
|         | 17.523 | 4.073     | 17.727 | -0.356 | -0.407   | 4.000   | 25.000  | 0.76594 | 2000 |  |
|         | 17.610 | 4.051     | 17.858 | -0.358 | -0.374   | 4.000   | 25.000  | 0.76320 | 2000 |  |
|         | 17.000 | 4.033     | 17.125 | -0.434 | +0.136   | 6.000   | 24.000  | 0.74805 | 100  |  |
|         | 17.390 | 4.206     | 17.577 | -0.244 | -0.531   | 4.000   | 25.000  | 0.78292 | 500  |  |
|         | 17.585 | 4.139     | 17.788 | -0.320 | -0.500   | 4.000   | 25.000  | 0.77557 | 1000 |  |
|         | 17.467 | 4.090     | 17.639 | -0.328 | -0.395   | 2.000   | 25.000  | 0.76731 | 2000 |  |
| AR      | 19.800 | 6.251     | 19.722 | -0.144 | -0.852   | 6.000   | 30.000  | 0.87489 | 100  |  |
|         | 19.690 | 6.131     | 19.615 | -0.135 | -0.787   | 4.000   | 30.000  | 0.87040 | 500  |  |
|         | 19.335 | 5.982     | 19.063 | -0.052 | -0.851   | 4.000   | 30.000  | 0.86072 | 1000 |  |
|         | 19.750 | 6.030     | 19.931 | -0.176 | -0.768   | 3.000   | 30.000  | 0.86484 | 2000 |  |
|         | 19.622 | 6.172     | 19.647 | -0.114 | -0.919   | 2.000   | 30.000  | 0.87186 | 2000 |  |
|         | 20.220 | 5.854     | 20.625 | -0.374 | -0.619   | 7.000   | 30.000  | 0.85853 | 100  |  |
|         | 18.924 | 6.090     | 18.810 | +0.019 | -0.941   | 4.000   | 30.000  | 0.86310 | 500  |  |
|         | 20.012 | 5.960     | 20.324 | -0.253 | -0.788   | 4.000   | 30.000  | 0.86306 | 1000 |  |
|         | 19.723 | 6.076     | 19.799 | -0.147 | -0.841   | 2.000   | 30.000  | 0.86752 | 2000 |  |
| WK      | 28.390 | 4.960     | 29.357 | -0.700 | -0.152   | 14.000  | 35.000  | 0.84187 | 100  |  |
|         | 27.878 | 5.432     | 29.035 | -1.109 | +1.124   | 7.000   | 35.000  | 0.85955 | 500  |  |
|         | 27.578 | 5.743     | 28.993 | -0.983 | +0.644   | 7.000   | 35.000  | 0.87238 | 1000 |  |
|         | 27.649 | 5.762     | 28.957 | -1.072 | +0.965   | 3.000   | 35.000  | 0.87452 | 2000 |  |
|         | 27.478 | 5.859     | 28.812 | -1.024 | +0.707   | 5.000   | 35.000  | 0.87658 | 2000 |  |
|         | 28.130 | 5.146     | 29.167 | -0.589 | -0.730   | 17.000  | 35.000  | 0.84395 | 100  |  |
|         | 27.412 | 6.056     | 29.014 | -1.005 | +0.546   | 5.000   | 35.000  | 0.88417 | 500  |  |
|         | 27.858 | 5.688     | 29.080 | -1.048 | +0.876   | 5.000   | 35.000  | 0.87314 | 1000 |  |
|         | 27.669 | 5.796     | 28.895 | -1.033 | +0.825   | 4.000   | 35.000  | 0.87608 | 2000 |  |
| PC      | 12.380 | 2.407     | 12.857 | -1.466 | +2.607   | 3.000   | 15.000  | 0.70260 | 100  |  |
|         | 12.360 | 2.607     | 12.981 | -1.490 | +2.316   | 2.000   | 15.000  | 0.75445 | 500  |  |
|         | 12.557 | 2.398     | 13.209 | -1.307 | +1.559   | 2.000   | 15.000  | 0.71656 | 1000 |  |
|         | 12.570 | 2.373     | 13.189 | -1.410 | +2.056   | 2.000   | 15.000  | 0.71386 | 2000 |  |
|         | 12.483 | 2.482     | 13.160 | -1.478 | +2.312   | 1.000   | 15.000  | 0.73404 | 2000 |  |
|         | 12.530 | 2.564     | 13.333 | -1.633 | +2.750   | 3.000   | 15.000  | 0.76436 | 100  |  |
|         | 12.554 | 2.508     | 13.310 | -1.621 | +2.762   | 2.000   | 15.000  | 0.74459 | 500  |  |
|         | 12.570 | 2.457     | 13.292 | -1.441 | +1.984   | 2.000   | 15.000  | 0.73370 | 1000 |  |
|         | 12.524 | 2.476     | 13.216 | -1.414 | +1.923   | 2.000   | 15.000  | 0.73663 | 2000 |  |
| AS      | 16.650 | 4.802     | 16.875 | -0.147 | -0.784   | 6.000   | 25.000  | 0.81703 | 100  |  |
|         | 16.672 | 4.669     | 17.265 | -0.439 | -0.455   | 0.000   | 25.000  | 0.80650 | 500  |  |
|         | 16.386 | 4.783     | 16.799 | -0.272 | -0.743   | 3.000   | 25.000  | 0.81223 | 1000 |  |
|         | 16.548 | 4.703     | 16.861 | -0.304 | -0.623   | 0.000   | 25.000  | 0.80868 | 2000 |  |
|         | 16.571 | 4.779     | 16.934 | -0.273 | -0.696   | 0.000   | 25.000  | 0.81358 | 2000 |  |
|         | 16.680 | 4.594     | 17.000 | -0.148 | -0.701   | 6.000   | 25.000  | 0.79486 | 100  |  |
|         | 16.606 | 4.732     | 16.848 | -0.238 | -0.718   | 5.000   | 25.000  | 0.81296 | 500  |  |
|         | 16.672 | 4.818     | 17.197 | -0.307 | -0.731   | 4.000   | 25.000  | 0.81924 | 1000 |  |
|         | 16.642 | 4.809     | 17.076 | -0.331 | -0.735   | 0.000   | 25.000  | 0.81863 | 2000 |  |

Table B-15. (Concluded)

| Standard |        |           |        |        |          |         |         |         |      |  |
|----------|--------|-----------|--------|--------|----------|---------|---------|---------|------|--|
| Subtest  | Mean   | Deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| MK       | 14.700 | 5.584     | 14.000 | +0.100 | -0.967   | 5.000   | 25.000  | 0.85959 | 100  |  |
|          | 14.512 | 5.460     | 14.015 | +0.112 | -0.950   | 3.000   | 25.000  | 0.85091 | 500  |  |
|          | 14.622 | 5.564     | 14.221 | +0.104 | -0.987   | 2.000   | 25.000  | 0.85668 | 1000 |  |
|          | 14.516 | 5.544     | 14.246 | +0.092 | -0.942   | 0.000   | 25.000  | 0.85560 | 2000 |  |
|          | 14.865 | 5.585     | 14.592 | +0.030 | -1.016   | 1.000   | 25.000  | 0.86060 | 2000 |  |
|          | 15.440 | 5.614     | 15.000 | +0.061 | -1.087   | 5.000   | 25.000  | 0.86465 | 100  |  |
|          | 14.638 | 5.806     | 13.808 | +0.202 | -1.101   | 4.000   | 25.000  | 0.87240 | 500  |  |
|          | 14.681 | 5.715     | 14.230 | +0.069 | -0.986   | 0.000   | 25.000  | 0.86612 | 1000 |  |
|          | 14.653 | 5.565     | 14.326 | +0.068 | -0.986   | 1.000   | 25.000  | 0.85793 | 2000 |  |
| MC       | 16.830 | 4.146     | 17.045 | -0.278 | -0.400   | 6.000   | 25.000  | 0.74231 | 100  |  |
|          | 16.592 | 4.358     | 16.738 | -0.282 | -0.507   | 5.000   | 25.000  | 0.76384 | 500  |  |
|          | 16.870 | 4.453     | 17.256 | -0.481 | -0.131   | 0.000   | 25.000  | 0.77899 | 1000 |  |
|          | 16.853 | 4.361     | 17.212 | -0.422 | -0.321   | 0.000   | 25.000  | 0.76784 | 2000 |  |
|          | 16.676 | 4.466     | 17.071 | -0.388 | -0.431   | 2.000   | 25.000  | 0.77745 | 2000 |  |
|          | 17.430 | 4.558     | 18.136 | -0.459 | -0.547   | 6.000   | 25.000  | 0.80009 | 100  |  |
|          | 16.900 | 4.281     | 17.344 | -0.474 | -0.211   | 4.000   | 25.000  | 0.76213 | 500  |  |
|          | 16.902 | 4.452     | 17.329 | -0.411 | -0.508   | 3.000   | 25.000  | 0.77846 | 1000 |  |
|          | 16.943 | 4.395     | 17.306 | -0.426 | -0.346   | 0.000   | 25.000  | 0.77398 | 2000 |  |
| EI       | 11.580 | 3.644     | 11.773 | -0.093 | -0.480   | 3.000   | 20.000  | 0.71865 | 100  |  |
|          | 12.760 | 3.546     | 12.833 | -0.078 | -0.609   | 3.000   | 20.000  | 0.72096 | 500  |  |
|          | 12.325 | 3.533     | 12.126 | +0.029 | -0.473   | 1.000   | 20.000  | 0.71347 | 1000 |  |
|          | 12.472 | 3.383     | 12.408 | -0.008 | -0.369   | 0.000   | 20.000  | 0.68572 | 2000 |  |
|          | 12.473 | 3.435     | 12.381 | -0.061 | -0.459   | 0.000   | 20.000  | 0.69621 | 2000 |  |
|          | 13.530 | 3.471     | 13.618 | -0.091 | -0.309   | 5.000   | 20.000  | 0.72514 | 100  |  |
|          | 12.622 | 3.416     | 12.364 | +0.089 | -0.582   | 5.000   | 20.000  | 0.69358 | 500  |  |
|          | 12.294 | 3.420     | 12.060 | +0.165 | -0.575   | 3.000   | 20.000  | 0.69246 | 1000 |  |
|          | 12.478 | 3.512     | 12.372 | +0.043 | -0.551   | 2.000   | 20.000  | 0.71035 | 2000 |  |

**Table B-16. Descriptive Statistics of Random Samples of Whites, Form 15b**

| Subtest | Standard |           |        |        |          |         |         |         |      |  |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|--|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 17.240   | 4.262     | 17.400 | -0.325 | +0.158   | 4.000   | 25.000  | 0.77619 | 100  |  |
|         | 17.610   | 3.994     | 17.940 | -0.285 | -0.545   | 6.000   | 25.000  | 0.75628 | 500  |  |
|         | 17.641   | 4.128     | 17.894 | -0.349 | -0.296   | 2.000   | 25.000  | 0.77569 | 1000 |  |
|         | 17.430   | 4.254     | 17.666 | -0.310 | -0.505   | 3.000   | 25.000  | 0.78492 | 2000 |  |
|         | 17.625   | 4.144     | 17.932 | -0.373 | -0.322   | 3.000   | 25.000  | 0.77618 | 2000 |  |
|         | 18.230   | 4.144     | 18.167 | -0.287 | -0.892   | 8.000   | 25.000  | 0.78235 | 100  |  |
|         | 17.774   | 4.084     | 18.105 | -0.347 | -0.610   | 7.000   | 25.000  | 0.77225 | 500  |  |
|         | 17.542   | 4.153     | 17.871 | -0.298 | -0.497   | 4.000   | 25.000  | 0.77388 | 1000 |  |
|         | 17.609   | 4.062     | 17.881 | -0.373 | -0.298   | 2.000   | 25.000  | 0.76611 | 2000 |  |
| AR      | 19.750   | 6.833     | 19.167 | -0.233 | -0.956   | 3.000   | 30.000  | 0.90471 | 100  |  |
|         | 20.026   | 5.943     | 20.231 | -0.236 | -0.845   | 4.000   | 30.000  | 0.86579 | 500  |  |
|         | 19.792   | 6.150     | 20.269 | -0.232 | -0.854   | 3.000   | 30.000  | 0.87370 | 1000 |  |
|         | 19.752   | 6.112     | 20.023 | -0.203 | -0.893   | 4.000   | 30.000  | 0.87216 | 2000 |  |
|         | 19.826   | 6.055     | 20.164 | -0.204 | -0.896   | 3.000   | 30.000  | 0.87037 | 2000 |  |
|         | 20.000   | 6.044     | 21.100 | -0.574 | -0.478   | 6.000   | 30.000  | 0.87091 | 100  |  |
|         | 19.688   | 6.041     | 19.860 | -0.264 | -0.734   | 3.000   | 30.000  | 0.86743 | 500  |  |
|         | 19.896   | 6.132     | 20.065 | -0.193 | -0.924   | 5.000   | 30.000  | 0.87407 | 1000 |  |
|         | 19.899   | 6.167     | 20.192 | -0.208 | -0.911   | 3.000   | 30.000  | 0.87561 | 2000 |  |
| WK      | 26.430   | 5.737     | 27.786 | -0.529 | -0.614   | 13.000  | 35.000  | 0.85934 | 100  |  |
|         | 27.996   | 5.394     | 29.025 | -0.921 | +0.724   | 6.000   | 35.000  | 0.86047 | 500  |  |
|         | 27.768   | 5.318     | 28.671 | -0.757 | +0.206   | 8.000   | 35.000  | 0.85231 | 1000 |  |
|         | 27.550   | 5.301     | 28.353 | -0.761 | +0.259   | 5.000   | 35.000  | 0.84866 | 2000 |  |
|         | 27.596   | 5.458     | 28.493 | -0.757 | +0.137   | 6.000   | 35.000  | 0.85849 | 2000 |  |
|         | 27.350   | 5.546     | 28.300 | -0.860 | +0.358   | 9.000   | 35.000  | 0.86110 | 100  |  |
|         | 27.430   | 5.292     | 28.305 | -0.765 | +0.221   | 9.000   | 35.000  | 0.84460 | 500  |  |
|         | 27.532   | 5.437     | 28.247 | -0.742 | +0.178   | 7.000   | 35.000  | 0.85620 | 1000 |  |
|         | 27.870   | 5.364     | 28.801 | -0.831 | +0.428   | 5.000   | 35.000  | 0.85761 | 2000 |  |
| PC      | 12.730   | 2.074     | 13.200 | -1.267 | +2.534   | 4.000   | 15.000  | 0.63685 | 100  |  |
|         | 12.378   | 2.564     | 13.005 | -1.445 | +2.194   | 2.000   | 15.000  | 0.75092 | 500  |  |
|         | 12.568   | 2.300     | 13.082 | -1.360 | +2.052   | 3.000   | 15.000  | 0.69889 | 1000 |  |
|         | 12.416   | 2.454     | 13.007 | -1.313 | +1.796   | 2.000   | 15.000  | 0.72825 | 2000 |  |
|         | 12.342   | 2.461     | 12.925 | -1.209 | +1.314   | 2.000   | 15.000  | 0.72176 | 2000 |  |
|         | 12.260   | 2.646     | 13.000 | -1.218 | +0.988   | 4.000   | 15.000  | 0.76161 | 100  |  |
|         | 12.170   | 2.758     | 12.895 | -1.295 | +1.361   | 2.000   | 15.000  | 0.77507 | 500  |  |
|         | 12.525   | 2.375     | 13.098 | -1.440 | +2.532   | 0.000   | 15.000  | 0.71432 | 1000 |  |
|         | 12.271   | 2.568     | 12.927 | -1.304 | +1.638   | 0.000   | 15.000  | 0.74276 | 2000 |  |
| AS      | 16.030   | 4.792     | 16.833 | -0.314 | -0.588   | 5.000   | 25.000  | 0.81382 | 100  |  |
|         | 16.858   | 4.612     | 17.306 | -0.235 | -0.809   | 4.000   | 25.000  | 0.80244 | 500  |  |
|         | 16.555   | 4.689     | 16.965 | -0.261 | -0.742   | 4.000   | 25.000  | 0.80702 | 1000 |  |
|         | 16.541   | 4.818     | 16.943 | -0.303 | -0.728   | 2.000   | 25.000  | 0.81655 | 2000 |  |
|         | 16.540   | 4.770     | 16.842 | -0.285 | -0.702   | 0.000   | 25.000  | 0.81257 | 2000 |  |
|         | 16.810   | 4.728     | 17.056 | -0.360 | -0.622   | 5.000   | 25.000  | 0.81410 | 100  |  |
|         | 16.246   | 4.820     | 16.619 | -0.275 | -0.688   | 4.000   | 25.000  | 0.81476 | 500  |  |
|         | 16.471   | 4.860     | 16.797 | -0.262 | -0.774   | 3.000   | 25.000  | 0.82004 | 1000 |  |
|         | 16.312   | 4.790     | 16.756 | -0.261 | -0.738   | 0.000   | 25.000  | 0.81265 | 2000 |  |

Table B-16. (Concluded)

| Standard |        |           |        |        |          |         |         |         |      |  |
|----------|--------|-----------|--------|--------|----------|---------|---------|---------|------|--|
| Subtest  | Mean   | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| MK       | 14.550 | 6.059     | 15.000 | -0.072 | -1.249   | 3.000   | 25.000  | 0.88289 | 100  |  |
|          | 14.400 | 5.786     | 14.000 | +0.135 | -0.997   | 2.000   | 25.000  | 0.87016 | 500  |  |
|          | 14.584 | 5.637     | 14.357 | +0.107 | -1.008   | 2.000   | 25.000  | 0.86215 | 1000 |  |
|          | 14.536 | 5.599     | 14.261 | +0.084 | -1.005   | 0.000   | 25.000  | 0.85960 | 2000 |  |
|          | 14.733 | 5.647     | 14.610 | +0.048 | -1.040   | 2.000   | 25.000  | 0.86365 | 2000 |  |
|          | 14.870 | 5.572     | 14.389 | +0.076 | -1.256   | 5.000   | 25.000  | 0.86273 | 100  |  |
|          | 15.026 | 5.661     | 14.463 | +0.010 | -1.068   | 2.000   | 25.000  | 0.86467 | 500  |  |
|          | 14.242 | 5.542     | 13.759 | +0.135 | -0.910   | 0.000   | 25.000  | 0.85372 | 1000 |  |
|          | 14.542 | 5.704     | 14.214 | +0.096 | -0.999   | 1.000   | 25.000  | 0.86615 | 2000 |  |
|          |        |           |        |        |          |         |         |         |      |  |
| MC       | 16.780 | 4.865     | 17.250 | -0.543 | -0.436   | 4.000   | 25.000  | 0.81932 | 100  |  |
|          | 16.820 | 4.458     | 17.080 | -0.346 | -0.508   | 3.000   | 25.000  | 0.77961 | 500  |  |
|          | 16.680 | 4.368     | 17.244 | -0.476 | -0.113   | 0.000   | 25.000  | 0.76697 | 1000 |  |
|          | 16.762 | 4.341     | 17.142 | -0.432 | -0.375   | 3.000   | 25.000  | 0.76371 | 2000 |  |
|          | 16.664 | 4.365     | 17.003 | -0.383 | -0.405   | 3.000   | 25.000  | 0.76600 | 2000 |  |
|          | 16.270 | 4.763     | 17.250 | -0.365 | -0.840   | 7.000   | 25.000  | 0.80224 | 100  |  |
|          | 16.910 | 4.266     | 17.330 | -0.545 | -0.285   | 4.000   | 24.000  | 0.75625 | 500  |  |
|          | 16.911 | 4.370     | 17.289 | -0.458 | -0.165   | 0.000   | 25.000  | 0.77000 | 1000 |  |
|          | 16.849 | 4.364     | 17.252 | -0.411 | -0.377   | 1.000   | 25.000  | 0.76842 | 2000 |  |
|          |        |           |        |        |          |         |         |         |      |  |
| EI       | 12.260 | 3.413     | 12.500 | -0.028 | -0.699   | 5.000   | 20.000  | 0.69310 | 100  |  |
|          | 12.726 | 3.542     | 12.786 | -0.132 | -0.512   | 2.000   | 20.000  | 0.72094 | 500  |  |
|          | 12.419 | 3.455     | 12.369 | -0.017 | -0.411   | 0.000   | 20.000  | 0.69683 | 1000 |  |
|          | 12.553 | 3.519     | 12.568 | -0.053 | -0.573   | 2.000   | 20.000  | 0.71572 | 2000 |  |
|          | 12.525 | 3.491     | 12.505 | -0.107 | -0.398   | 0.000   | 20.000  | 0.70761 | 2000 |  |
|          | 12.290 | 3.788     | 12.357 | -0.119 | -0.667   | 2.000   | 20.000  | 0.75041 | 100  |  |
|          | 12.634 | 3.477     | 12.466 | +0.023 | -0.654   | 4.000   | 20.000  | 0.71008 | 500  |  |
|          | 12.646 | 3.474     | 12.643 | -0.178 | -0.371   | 0.000   | 20.000  | 0.70845 | 1000 |  |
|          | 12.527 | 3.464     | 12.569 | -0.098 | -0.431   | 0.000   | 20.000  | 0.70134 | 2000 |  |
|          |        |           |        |        |          |         |         |         |      |  |

**Table B-17. Descriptive Statistics of Random Samples of Whites, Form 15c**

| Subtest | Standard |           |        |        |          |         |         |         |      |  |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|--|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 16.960   | 3.921     | 16.900 | -0.235 | -0.313   | 7.000   | 25.000  | 0.72479 | 100  |  |
|         | 17.060   | 4.016     | 17.023 | -0.131 | -0.526   | 6.000   | 25.000  | 0.75252 | 500  |  |
|         | 17.281   | 4.206     | 17.551 | -0.211 | -0.601   | 5.000   | 25.000  | 0.78142 | 1000 |  |
|         | 17.292   | 4.126     | 17.488 | -0.229 | -0.486   | 5.000   | 25.000  | 0.77229 | 2000 |  |
|         | 17.232   | 4.083     | 17.382 | -0.259 | -0.379   | 4.000   | 25.000  | 0.76389 | 2000 |  |
|         | 18.050   | 3.849     | 18.500 | -0.093 | -0.908   | 11.000  | 25.000  | 0.75447 | 100  |  |
|         | 16.920   | 4.063     | 16.858 | -0.178 | -0.265   | 4.000   | 25.000  | 0.75851 | 500  |  |
|         | 17.171   | 4.055     | 17.252 | -0.196 | -0.426   | 5.000   | 25.000  | 0.76150 | 1000 |  |
|         | 17.204   | 4.063     | 17.459 | -0.241 | -0.461   | 5.000   | 25.000  | 0.76300 | 2000 |  |
| AR      | 19.880   | 6.617     | 21.000 | -0.252 | -1.038   | 6.000   | 30.000  | 0.89406 | 100  |  |
|         | 19.438   | 5.972     | 19.155 | -0.102 | -0.842   | 6.000   | 30.000  | 0.86240 | 500  |  |
|         | 19.381   | 6.428     | 19.432 | -0.167 | -0.851   | 2.000   | 30.000  | 0.88315 | 1000 |  |
|         | 19.404   | 6.154     | 19.407 | -0.150 | -0.832   | 2.000   | 30.000  | 0.87152 | 2000 |  |
|         | 19.360   | 6.225     | 19.377 | -0.122 | -0.854   | 2.000   | 30.000  | 0.87433 | 2000 |  |
|         | 20.080   | 6.161     | 21.500 | -0.264 | -0.991   | 8.000   | 30.000  | 0.87572 | 100  |  |
|         | 19.370   | 6.090     | 19.423 | -0.099 | -0.768   | 2.000   | 30.000  | 0.86891 | 500  |  |
|         | 19.069   | 6.312     | 19.033 | -0.109 | -0.842   | 2.000   | 30.000  | 0.87803 | 1000 |  |
|         | 19.376   | 6.294     | 19.344 | -0.100 | -0.935   | 2.000   | 30.000  | 0.87762 | 2000 |  |
| WK      | 27.970   | 5.661     | 29.000 | -0.900 | +0.392   | 12.000  | 35.000  | 0.87239 | 100  |  |
|         | 28.650   | 4.911     | 29.682 | -0.981 | +1.071   | 9.000   | 35.000  | 0.84304 | 500  |  |
|         | 28.109   | 5.403     | 29.107 | -1.017 | +1.063   | 3.000   | 35.000  | 0.86462 | 1000 |  |
|         | 28.279   | 5.029     | 29.121 | -0.962 | +0.968   | 5.000   | 35.000  | 0.84619 | 2000 |  |
|         | 28.248   | 5.142     | 29.195 | -1.088 | +1.407   | 4.000   | 35.000  | 0.85310 | 2000 |  |
|         | 27.840   | 4.798     | 28.250 | -0.667 | +0.038   | 13.000  | 35.000  | 0.82208 | 100  |  |
|         | 28.270   | 5.454     | 29.548 | -1.130 | +1.341   | 6.000   | 35.000  | 0.86861 | 500  |  |
|         | 28.183   | 5.080     | 28.833 | -0.842 | +0.599   | 6.000   | 35.000  | 0.84633 | 1000 |  |
|         | 28.158   | 5.140     | 28.938 | -1.057 | +1.486   | 3.000   | 35.000  | 0.85155 | 2000 |  |
| PC      | 11.490   | 2.615     | 11.833 | -0.888 | +0.479   | 4.000   | 15.000  | 0.67414 | 100  |  |
|         | 11.660   | 2.623     | 12.253 | -1.088 | +1.070   | 2.000   | 15.000  | 0.69712 | 500  |  |
|         | 11.833   | 2.510     | 12.394 | -1.275 | +1.977   | 0.000   | 15.000  | 0.68323 | 1000 |  |
|         | 11.780   | 2.477     | 12.280 | -1.140 | +1.511   | 0.000   | 15.000  | 0.66214 | 2000 |  |
|         | 11.774   | 2.452     | 12.244 | -1.130 | +1.277   | 1.000   | 15.000  | 0.65572 | 2000 |  |
|         | 11.830   | 2.340     | 12.119 | -1.089 | +1.433   | 4.000   | 15.000  | 0.61838 | 100  |  |
|         | 11.758   | 2.453     | 12.265 | -1.038 | +1.050   | 2.000   | 15.000  | 0.65290 | 500  |  |
|         | 11.660   | 2.561     | 12.148 | -1.091 | +1.061   | 2.000   | 15.000  | 0.67722 | 1000 |  |
|         | 11.703   | 2.514     | 12.159 | -1.153 | +1.441   | 0.000   | 15.000  | 0.66766 | 2000 |  |
| AS      | 16.940   | 4.362     | 17.100 | -0.166 | -0.866   | 8.000   | 25.000  | 0.76928 | 100  |  |
|         | 16.768   | 4.791     | 17.136 | -0.331 | -0.677   | 3.000   | 25.000  | 0.81112 | 500  |  |
|         | 16.704   | 4.627     | 16.798 | -0.224 | -0.752   | 4.000   | 25.000  | 0.79548 | 1000 |  |
|         | 16.765   | 4.554     | 17.122 | -0.305 | -0.589   | 1.000   | 25.000  | 0.78903 | 2000 |  |
|         | 16.911   | 4.556     | 17.252 | -0.330 | -0.504   | 0.000   | 25.000  | 0.79158 | 2000 |  |
|         | 17.140   | 4.774     | 18.083 | -0.578 | -0.640   | 6.000   | 25.000  | 0.81558 | 100  |  |
|         | 16.400   | 4.656     | 16.500 | -0.269 | -0.594   | 2.000   | 25.000  | 0.79412 | 500  |  |
|         | 16.864   | 4.543     | 17.303 | -0.312 | -0.569   | 1.000   | 25.000  | 0.78870 | 1000 |  |
|         | 16.622   | 4.664     | 16.892 | -0.332 | 0.367    | 0.000   | 25.000  | 0.79848 | 2000 |  |

Table B-17. (Concluded)

| Standard |        |           |        |        |          |         |         |         |      |  |
|----------|--------|-----------|--------|--------|----------|---------|---------|---------|------|--|
| Subtest  | Mean   | Deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| MK       | 15.280 | 6.265     | 15.500 | -0.068 | -1.234   | 4.000   | 25.000  | 0.89618 | 100  |  |
|          | 14.436 | 5.637     | 13.984 | +0.104 | -1.040   | 2.000   | 25.000  | 0.86363 | 500  |  |
|          | 14.556 | 5.667     | 14.172 | +0.119 | -0.995   | 2.000   | 25.000  | 0.86411 | 1000 |  |
|          | 14.384 | 5.760     | 13.830 | +0.122 | -1.041   | 0.000   | 25.000  | 0.86926 | 2000 |  |
|          | 14.313 | 5.736     | 13.858 | +0.122 | -0.998   | 0.000   | 25.000  | 0.86903 | 2000 |  |
|          | 14.310 | 5.550     | 13.500 | +0.188 | -1.176   | 4.000   | 25.000  | 0.85282 | 100  |  |
|          | 14.128 | 5.847     | 13.385 | +0.215 | -1.121   | 3.000   | 25.000  | 0.87230 | 500  |  |
|          | 14.370 | 5.743     | 13.778 | +0.128 | -1.026   | 1.000   | 25.000  | 0.86818 | 1000 |  |
|          | 14.627 | 5.734     | 14.225 | +0.098 | -1.019   | 0.000   | 25.000  | 0.86930 | 2000 |  |
| MC       | 16.570 | 4.732     | 17.000 | -0.107 | -1.209   | 8.000   | 25.000  | 0.79991 | 100  |  |
|          | 16.836 | 4.462     | 17.105 | -0.250 | -0.677   | 5.000   | 25.000  | 0.77852 | 500  |  |
|          | 16.655 | 4.711     | 17.016 | -0.364 | -0.561   | 3.000   | 25.000  | 0.80092 | 1000 |  |
|          | 16.590 | 4.566     | 16.976 | -0.331 | -0.595   | 0.000   | 25.000  | 0.78497 | 2000 |  |
|          | 16.315 | 4.682     | 16.575 | -0.247 | -0.620   | 0.000   | 25.000  | 0.79336 | 2000 |  |
|          | 16.930 | 4.520     | 17.750 | -0.342 | -0.773   | 6.000   | 24.000  | 0.78989 | 100  |  |
|          | 16.754 | 4.673     | 17.313 | -0.363 | -0.649   | 3.000   | 25.000  | 0.79807 | 500  |  |
|          | 16.614 | 4.642     | 17.000 | -0.272 | -0.706   | 4.000   | 25.000  | 0.79299 | 1000 |  |
|          | 16.558 | 4.671     | 16.983 | -0.313 | -0.680   | 2.000   | 25.000  | 0.79542 | 2000 |  |
| EI       | 12.840 | 3.311     | 13.125 | -0.260 | -0.360   | 5.000   | 20.000  | 0.66579 | 100  |  |
|          | 12.538 | 3.520     | 12.949 | -0.328 | -0.585   | 3.000   | 19.000  | 0.71122 | 500  |  |
|          | 12.855 | 3.533     | 13.134 | -0.403 | -0.155   | 0.000   | 20.000  | 0.72414 | 1000 |  |
|          | 12.722 | 3.521     | 12.917 | -0.283 | -0.374   | 2.000   | 20.000  | 0.71645 | 2000 |  |
|          | 12.819 | 3.522     | 13.092 | -0.279 | -0.489   | 2.000   | 20.000  | 0.71943 | 2000 |  |
|          | 12.790 | 3.543     | 12.625 | -0.261 | -0.647   | 3.000   | 19.000  | 0.71750 | 100  |  |
|          | 12.748 | 3.369     | 13.041 | -0.305 | -0.252   | 2.000   | 20.000  | 0.69508 | 500  |  |
|          | 12.886 | 3.404     | 13.202 | -0.285 | -0.434   | 2.000   | 20.000  | 0.69876 | 1000 |  |
|          | 12.652 | 3.513     | 12.906 | -0.291 | -0.419   | 2.000   | 20.000  | 0.71653 | 2000 |  |

**Table B-18. Descriptive Statistics of Random Samples of Whites, Form 16a**

| Subtest | Standard |           |        |        |          |         |         |         |      |  |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|--|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 17.860   | 4.404     | 17.700 | -0.305 | -0.807   | 7.000   | 25.000  | 0.80960 | 100  |  |
|         | 17.618   | 4.388     | 17.700 | -0.386 | -0.465   | 6.000   | 25.000  | 0.80835 | 500  |  |
|         | 17.499   | 4.358     | 17.953 | -0.451 | -0.400   | 5.000   | 25.000  | 0.80317 | 1000 |  |
|         | 17.386   | 4.425     | 17.874 | -0.443 | -0.383   | 3.000   | 25.000  | 0.80730 | 2000 |  |
|         | 17.132   | 4.397     | 17.475 | -0.421 | -0.306   | 2.000   | 25.000  | 0.80073 | 2000 |  |
|         | 17.330   | 4.513     | 18.125 | -0.635 | +0.235   | 4.000   | 25.000  | 0.81148 | 100  |  |
|         | 17.562   | 4.539     | 17.929 | -0.469 | -0.364   | 4.000   | 25.000  | 0.81720 | 500  |  |
|         | 17.186   | 4.493     | 17.696 | -0.426 | -0.366   | 3.000   | 25.000  | 0.80926 | 1000 |  |
|         | 17.306   | 4.485     | 17.811 | -0.468 | -0.412   | 2.000   | 25.000  | 0.80934 | 2000 |  |
|         | 19.680   | 6.123     | 19.300 | -0.100 | -0.689   | 5.000   | 30.000  | 0.87220 | 100  |  |
| AR      | 19.578   | 5.762     | 19.675 | -0.141 | -0.557   | 1.000   | 30.000  | 0.85031 | 500  |  |
|         | 19.664   | 5.924     | 19.929 | -0.187 | -0.724   | 4.000   | 30.000  | 0.85929 | 1000 |  |
|         | 19.734   | 5.781     | 19.785 | -0.165 | -0.716   | 4.000   | 30.000  | 0.85258 | 2000 |  |
|         | 19.575   | 5.819     | 19.783 | -0.184 | -0.695   | 1.000   | 30.000  | 0.85324 | 2000 |  |
|         | 20.230   | 5.218     | 19.500 | -0.274 | -0.173   | 7.000   | 30.000  | 0.81611 | 100  |  |
|         | 19.630   | 5.848     | 19.667 | -0.141 | -0.619   | 4.000   | 30.000  | 0.85645 | 500  |  |
|         | 19.690   | 5.738     | 19.713 | -0.141 | -0.794   | 4.000   | 30.000  | 0.84940 | 1000 |  |
|         | 19.635   | 5.812     | 19.720 | -0.159 | -0.674   | 1.000   | 30.000  | 0.85477 | 2000 |  |
|         | 28.180   | 5.194     | 29.000 | -0.652 | -0.154   | 13.000  | 35.000  | 0.85862 | 100  |  |
|         | 27.962   | 5.167     | 29.204 | -0.886 | +0.419   | 8.000   | 35.000  | 0.85078 | 500  |  |
| WK      | 27.935   | 5.231     | 28.993 | -1.018 | +0.886   | 8.000   | 35.000  | 0.85360 | 1000 |  |
|         | 27.955   | 5.131     | 28.915 | -0.873 | +0.454   | 9.000   | 35.000  | 0.84858 | 2000 |  |
|         | 28.001   | 5.148     | 28.923 | -0.931 | +0.597   | 8.000   | 35.000  | 0.84962 | 2000 |  |
|         | 27.710   | 5.518     | 28.500 | -0.937 | +0.979   | 10.000  | 35.000  | 0.86812 | 100  |  |
|         | 28.174   | 5.226     | 29.375 | -0.957 | +0.602   | 8.000   | 35.000  | 0.85668 | 500  |  |
|         | 27.847   | 5.153     | 28.734 | -0.849 | +0.414   | 9.000   | 35.000  | 0.84865 | 1000 |  |
|         | 28.074   | 5.016     | 29.032 | -0.968 | +0.930   | 4.000   | 35.000  | 0.84267 | 2000 |  |
|         | 12.380   | 2.651     | 13.083 | -1.517 | +2.297   | 3.000   | 15.000  | 0.75873 | 100  |  |
|         | 12.460   | 2.546     | 13.063 | -1.646 | +3.335   | 2.000   | 15.000  | 0.74100 | 500  |  |
|         | 12.518   | 2.647     | 13.336 | -1.479 | +2.076   | 0.000   | 15.000  | 0.77251 | 1000 |  |
| PC      | 12.546   | 2.470     | 13.216 | -1.413 | +2.065   | 0.000   | 15.000  | 0.73295 | 2000 |  |
|         | 12.681   | 2.422     | 13.337 | -1.553 | +2.670   | 1.000   | 15.000  | 0.73219 | 2000 |  |
|         | 12.550   | 2.371     | 13.200 | -1.357 | +1.419   | 5.000   | 15.000  | 0.70511 | 100  |  |
|         | 12.680   | 2.481     | 13.420 | -1.536 | +2.561   | 1.000   | 15.000  | 0.74746 | 500  |  |
|         | 12.635   | 2.444     | 13.341 | -1.527 | +2.606   | 2.000   | 15.000  | 0.73260 | 1000 |  |
|         | 12.592   | 2.475     | 13.279 | -1.451 | +2.135   | 0.000   | 15.000  | 0.73825 | 2000 |  |
|         | 16.980   | 5.284     | 18.500 | -0.619 | -0.514   | 4.000   | 25.000  | 0.85248 | 100  |  |
|         | 16.630   | 5.447     | 17.382 | -0.500 | -0.640   | 2.000   | 25.000  | 0.86007 | 500  |  |
|         | 16.390   | 5.263     | 16.833 | -0.329 | -0.766   | 0.000   | 25.000  | 0.84343 | 1000 |  |
|         | 16.250   | 5.353     | 16.686 | -0.297 | -0.823   | 2.000   | 25.000  | 0.84897 | 2000 |  |
| AS      | 16.412   | 5.376     | 17.009 | -0.346 | -0.841   | 2.000   | 25.000  | 0.85197 | 2000 |  |
|         | 17.050   | 5.048     | 17.833 | -0.373 | -0.559   | 4.000   | 25.000  | 0.83462 | 100  |  |
|         | 16.820   | 5.050     | 17.167 | -0.305 | -0.773   | 2.000   | 25.000  | 0.83281 | 500  |  |
|         | 16.706   | 5.332     | 17.259 | -0.333 | -0.869   | 3.000   | 25.000  | 0.85238 | 1000 |  |
|         | 16.576   | 5.316     | 17.226 | -0.347 | -0.812   | 2.000   | 25.000  | 0.84959 | 2000 |  |

Table B-18. (Concluded)

|         |        | Standard  |        |        |          |         |         |         |      |  |
|---------|--------|-----------|--------|--------|----------|---------|---------|---------|------|--|
| Subtest | Mean   | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| MK      | 14.880 | 5.885     | 14.167 | +0.155 | -1.231   | 4.000   | 25.000  | 0.87319 | 100  |  |
|         | 14.520 | 5.803     | 13.700 | +0.194 | -1.096   | 3.000   | 25.000  | 0.86981 | 500  |  |
|         | 14.420 | 5.993     | 13.482 | +0.209 | -1.103   | 3.000   | 25.000  | 0.87959 | 1000 |  |
|         | 14.132 | 5.703     | 13.376 | +0.256 | -0.974   | 1.000   | 25.000  | 0.86285 | 2000 |  |
|         | 14.142 | 5.872     | 13.310 | +0.249 | -1.049   | 0.000   | 25.000  | 0.87196 | 2000 |  |
|         | 14.460 | 5.582     | 13.833 | +0.108 | -1.106   | 4.000   | 25.000  | 0.85684 | 100  |  |
|         | 14.064 | 5.898     | 13.152 | +0.275 | -0.983   | 1.000   | 25.000  | 0.87374 | 500  |  |
|         | 14.054 | 5.774     | 13.212 | +0.272 | -1.043   | 1.000   | 25.000  | 0.86634 | 1000 |  |
|         | 14.301 | 5.873     | 13.690 | +0.168 | -1.073   | 1.000   | 25.000  | 0.87213 | 2000 |  |
|         |        |           |        |        |          |         |         |         |      |  |
| MC      | 17.110 | 4.131     | 17.389 | -0.304 | -0.352   | 6.000   | 25.000  | 0.73130 | 100  |  |
|         | 16.822 | 4.336     | 17.245 | -0.340 | -0.490   | 4.000   | 25.000  | 0.75736 | 500  |  |
|         | 17.322 | 4.240     | 17.919 | -0.529 | -0.299   | 3.000   | 25.000  | 0.75488 | 1000 |  |
|         | 17.215 | 4.359     | 17.777 | -0.505 | -0.298   | 0.000   | 25.000  | 0.76727 | 2000 |  |
|         | 17.206 | 4.275     | 17.675 | -0.526 | -0.035   | 0.000   | 25.000  | 0.75555 | 2000 |  |
|         | 16.820 | 4.324     | 17.100 | -0.371 | -0.075   | 4.000   | 25.000  | 0.75371 | 100  |  |
|         | 16.976 | 4.519     | 17.429 | -0.432 | -0.471   | 4.000   | 25.000  | 0.78023 | 500  |  |
|         | 16.976 | 4.371     | 17.295 | -0.374 | -0.300   | 0.000   | 25.000  | 0.76454 | 1000 |  |
|         | 17.090 | 4.237     | 17.566 | -0.487 | -0.195   | 0.000   | 25.000  | 0.74953 | 2000 |  |
|         |        |           |        |        |          |         |         |         |      |  |
| EI      | 13.850 | 3.328     | 14.083 | -0.093 | -0.692   | 6.000   | 20.000  | 0.69908 | 100  |  |
|         | 12.956 | 3.714     | 13.077 | -0.252 | -0.383   | 2.000   | 20.000  | 0.74521 | 500  |  |
|         | 13.079 | 3.628     | 13.276 | -0.227 | -0.529   | 2.000   | 20.000  | 0.73354 | 1000 |  |
|         | 13.000 | 3.711     | 12.998 | -0.136 | -0.588   | 2.000   | 20.000  | 0.74584 | 2000 |  |
|         | 13.014 | 3.718     | 13.091 | -0.243 | -0.419   | 0.000   | 20.000  | 0.74687 | 2000 |  |
|         | 13.130 | 3.689     | 13.227 | -0.350 | -0.470   | 4.000   | 20.000  | 0.75222 | 100  |  |
|         | 13.068 | 3.741     | 13.200 | -0.207 | -0.576   | 3.000   | 20.000  | 0.75237 | 500  |  |
|         | 13.049 | 3.752     | 13.110 | -0.232 | -0.317   | 0.000   | 20.000  | 0.75382 | 1000 |  |
|         | 12.996 | 3.728     | 13.066 | -0.249 | -0.351   | 0.000   | 20.000  | 0.74906 | 2000 |  |
|         |        |           |        |        |          |         |         |         |      |  |

**Table B-19. Descriptive Statistics of Random Samples of Whites, Form 16b**

| Standard |        |           |        |        |          |         |         |         |      |  |
|----------|--------|-----------|--------|--------|----------|---------|---------|---------|------|--|
| Subtest  | Mean   | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS       | 17.460 | 4.274     | 17.722 | -0.429 | -0.184   | 6.000   | 25.000  | 0.79357 | 100  |  |
|          | 17.414 | 4.392     | 17.862 | -0.482 | -0.272   | 4.000   | 25.000  | 0.80530 | 500  |  |
|          | 17.619 | 4.320     | 18.196 | -0.430 | -0.509   | 4.000   | 25.000  | 0.79784 | 1000 |  |
|          | 17.470 | 4.442     | 17.960 | -0.524 | -0.180   | 2.000   | 25.000  | 0.80969 | 2000 |  |
|          | 17.379 | 4.507     | 17.893 | -0.463 | -0.420   | 3.000   | 25.000  | 0.81306 | 2000 |  |
|          | 17.300 | 4.437     | 17.929 | -0.517 | -0.001   | 4.000   | 25.000  | 0.80403 | 100  |  |
|          | 17.214 | 4.688     | 17.524 | -0.326 | -0.584   | 3.000   | 25.000  | 0.82666 | 500  |  |
|          | 17.450 | 4.399     | 17.856 | -0.373 | -0.499   | 3.000   | 25.000  | 0.80522 | 1000 |  |
|          | 17.557 | 4.526     | 18.061 | -0.425 | -0.427   | 2.000   | 25.000  | 0.81795 | 2000 |  |
|          |        |           |        |        |          |         |         |         |      |  |
| AR       | 19.890 | 5.833     | 20.136 | -0.204 | -0.649   | 6.000   | 30.000  | 0.85255 | 100  |  |
|          | 19.218 | 6.494     | 19.132 | -0.050 | -1.006   | 6.000   | 30.000  | 0.88565 | 500  |  |
|          | 19.858 | 6.282     | 20.088 | -0.234 | -0.877   | 2.000   | 30.000  | 0.87847 | 1000 |  |
|          | 19.880 | 6.267     | 20.084 | -0.221 | -0.840   | 2.000   | 30.000  | 0.87824 | 2000 |  |
|          | 19.741 | 6.304     | 19.912 | -0.190 | -0.889   | 3.000   | 30.000  | 0.87937 | 2000 |  |
|          | 19.220 | 6.447     | 19.300 | -0.128 | -0.788   | 6.000   | 30.000  | 0.88449 | 100  |  |
|          | 19.560 | 6.375     | 20.036 | -0.211 | -0.853   | 3.000   | 30.000  | 0.88024 | 500  |  |
|          | 19.864 | 6.199     | 20.153 | -0.229 | -0.821   | 3.000   | 30.000  | 0.87358 | 1000 |  |
|          | 19.768 | 6.250     | 19.917 | -0.180 | -0.890   | 3.000   | 30.000  | 0.87690 | 2000 |  |
|          |        |           |        |        |          |         |         |         |      |  |
| WK       | 28.430 | 4.504     | 29.000 | -0.620 | -0.339   | 18.000  | 35.000  | 0.81122 | 100  |  |
|          | 27.936 | 5.266     | 28.705 | -0.743 | -0.046   | 11.000  | 35.000  | 0.86048 | 500  |  |
|          | 28.097 | 5.082     | 28.879 | -0.765 | +0.165   | 10.000  | 35.000  | 0.84850 | 1000 |  |
|          | 28.039 | 5.322     | 28.960 | -0.915 | +0.588   | 7.000   | 35.000  | 0.86298 | 2000 |  |
|          | 28.077 | 5.302     | 29.051 | -0.927 | +0.765   | 5.000   | 35.000  | 0.86220 | 2000 |  |
|          | 28.560 | 4.393     | 28.700 | -0.589 | -0.141   | 15.000  | 35.000  | 0.80481 | 100  |  |
|          | 28.038 | 5.275     | 29.036 | -0.913 | +0.725   | 8.000   | 35.000  | 0.86115 | 500  |  |
|          | 28.019 | 5.198     | 28.792 | -0.927 | +0.908   | 2.000   | 35.000  | 0.85614 | 1000 |  |
|          | 28.085 | 5.287     | 28.966 | -0.928 | +0.872   | 2.000   | 35.000  | 0.86236 | 2000 |  |
|          |        |           |        |        |          |         |         |         |      |  |
| PC       | 12.250 | 2.254     | 12.389 | -0.740 | +0.368   | 5.000   | 15.000  | 0.64126 | 100  |  |
|          | 12.208 | 2.475     | 12.764 | -1.263 | +1.726   | 2.000   | 15.000  | 0.70843 | 500  |  |
|          | 12.351 | 2.442     | 12.914 | -1.181 | +1.221   | 2.000   | 15.000  | 0.70361 | 1000 |  |
|          | 12.222 | 2.453     | 12.767 | -1.079 | +0.949   | 2.000   | 15.000  | 0.69821 | 2000 |  |
|          | 12.262 | 2.440     | 12.791 | -1.121 | +1.218   | 2.000   | 15.000  | 0.69744 | 2000 |  |
|          | 11.860 | 3.178     | 12.500 | -1.451 | +1.930   | 2.000   | 15.000  | 0.81961 | 100  |  |
|          | 12.124 | 2.581     | 12.778 | -0.953 | +0.249   | 4.000   | 15.000  | 0.72282 | 500  |  |
|          | 12.297 | 2.439     | 12.825 | -1.135 | +1.152   | 2.000   | 15.000  | 0.70040 | 1000 |  |
|          | 12.171 | 2.535     | 12.718 | -1.094 | +1.160   | 0.000   | 15.000  | 0.71472 | 2000 |  |
|          |        |           |        |        |          |         |         |         |      |  |
| AS       | 16.870 | 5.247     | 17.357 | -0.361 | -0.770   | 5.000   | 25.000  | 0.84662 | 100  |  |
|          | 16.506 | 5.363     | 17.186 | -0.405 | -0.757   | 3.000   | 25.000  | 0.85230 | 500  |  |
|          | 16.557 | 5.197     | 16.986 | -0.291 | -0.893   | 3.000   | 25.000  | 0.84121 | 1000 |  |
|          | 16.538 | 5.356     | 17.231 | -0.383 | -0.748   | 0.000   | 25.000  | 0.85257 | 2000 |  |
|          | 16.527 | 5.331     | 17.144 | -0.387 | -0.751   | 0.000   | 25.000  | 0.85073 | 2000 |  |
|          | 16.010 | 6.325     | 16.250 | -0.333 | -0.992   | 0.000   | 25.000  | 0.89999 | 100  |  |
|          | 16.950 | 5.210     | 17.629 | -0.420 | -0.712   | 4.000   | 25.000  | 0.84588 | 500  |  |
|          | 16.404 | 5.396     | 16.908 | -0.358 | -0.699   | 0.000   | 25.000  | 0.85372 | 1000 |  |
|          | 16.562 | 5.370     | 17.175 | -0.335 | -0.842   | 0.000   | 25.000  | 0.85457 | 2000 |  |
|          |        |           |        |        |          |         |         |         |      |  |

Table B-19. (Concluded)

| Standard |        |           |        |        |          |         |         |         |      |  |
|----------|--------|-----------|--------|--------|----------|---------|---------|---------|------|--|
| Subtest  | Mean   | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| MK       | 13.910 | 5.719     | 13.500 | +0.138 | -1.139   | 4.000   | 25.000  | 0.86357 | 100  |  |
|          | 14.700 | 5.977     | 14.196 | +0.081 | -1.140   | 0.000   | 25.000  | 0.87951 | 500  |  |
|          | 14.273 | 5.814     | 13.783 | +0.159 | -1.051   | 2.000   | 25.000  | 0.86934 | 1000 |  |
|          | 14.506 | 5.754     | 13.980 | +0.151 | -1.026   | 0.000   | 25.000  | 0.86703 | 2000 |  |
|          | 14.476 | 5.752     | 14.055 | +0.113 | -1.043   | 0.000   | 25.000  | 0.86706 | 2000 |  |
|          | 14.760 | 6.128     | 13.929 | +0.157 | -1.195   | 4.000   | 25.000  | 0.88921 | 100  |  |
|          | 14.646 | 5.998     | 14.033 | +0.109 | -1.138   | 3.000   | 25.000  | 0.88112 | 500  |  |
|          | 14.632 | 5.852     | 14.104 | +0.111 | -1.045   | 1.000   | 25.000  | 0.87273 | 1000 |  |
|          | 14.251 | 5.775     | 13.679 | +0.181 | -1.012   | 0.000   | 25.000  | 0.86792 | 2000 |  |
| MC       | 16.850 | 4.328     | 17.722 | -0.592 | -0.644   | 6.000   | 23.000  | 0.76320 | 100  |  |
|          | 16.972 | 4.289     | 17.543 | -0.454 | -0.566   | 5.000   | 25.000  | 0.75522 | 500  |  |
|          | 17.204 | 4.339     | 17.900 | -0.530 | -0.396   | 3.000   | 25.000  | 0.76700 | 1000 |  |
|          | 16.883 | 4.319     | 17.388 | -0.461 | -0.303   | 2.000   | 25.000  | 0.75538 | 2000 |  |
|          | 17.098 | 4.264     | 17.571 | -0.426 | -0.418   | 0.000   | 25.000  | 0.75429 | 2000 |  |
|          | 17.020 | 4.429     | 17.667 | -0.516 | -0.547   | 6.000   | 25.000  | 0.77612 | 100  |  |
|          | 17.220 | 4.170     | 17.827 | -0.541 | -0.238   | 4.000   | 25.000  | 0.74529 | 500  |  |
|          | 16.854 | 4.428     | 17.372 | -0.448 | -0.549   | 4.000   | 25.000  | 0.77059 | 1000 |  |
|          | 17.109 | 4.313     | 17.577 | -0.482 | -0.273   | 0.000   | 25.000  | 0.76211 | 2000 |  |
| EI       | 13.250 | 3.462     | 13.136 | -0.330 | -0.150   | 4.000   | 20.000  | 0.71603 | 100  |  |
|          | 13.098 | 3.810     | 13.360 | -0.308 | -0.583   | 3.000   | 20.000  | 0.76150 | 500  |  |
|          | 13.089 | 3.606     | 13.060 | -0.135 | -0.417   | 2.000   | 20.000  | 0.72891 | 1000 |  |
|          | 13.195 | 3.659     | 13.293 | -0.221 | -0.560   | 1.000   | 20.000  | 0.74105 | 2000 |  |
|          | 13.064 | 3.739     | 13.155 | -0.172 | -0.585   | 0.000   | 20.000  | 0.75155 | 2000 |  |
|          | 12.810 | 3.581     | 12.773 | +0.079 | -0.664   | 5.000   | 20.000  | 0.71928 | 100  |  |
|          | 13.230 | 3.826     | 13.333 | -0.377 | -0.405   | 2.000   | 20.000  | 0.76949 | 500  |  |
|          | 13.111 | 3.753     | 13.305 | -0.252 | -0.521   | 3.000   | 20.000  | 0.75508 | 1000 |  |
|          | 13.145 | 3.728     | 13.272 | -0.245 | -0.504   | 0.000   | 20.000  | 0.75146 | 2000 |  |

**Table B-20. Descriptive Statistics of Random Samples of Whites, Form 17a**

| Subtest | Standard |           |        |        |          |         |         |         |      |  |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|--|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 16.920   | 4.225     | 17.583 | -0.513 | -0.323   | 5.000   | 24.000  | 0.77494 | 100  |  |
|         | 17.290   | 4.028     | 17.545 | -0.401 | -0.345   | 6.000   | 25.000  | 0.75218 | 500  |  |
|         | 17.231   | 4.052     | 17.488 | -0.342 | -0.419   | 4.000   | 25.000  | 0.76084 | 1000 |  |
|         | 17.464   | 4.058     | 17.731 | -0.421 | -0.230   | 4.000   | 25.000  | 0.76213 | 2000 |  |
|         | 17.273   | 4.098     | 17.580 | -0.397 | -0.271   | 3.000   | 25.000  | 0.76501 | 2000 |  |
|         | 17.160   | 3.969     | 17.278 | -0.453 | -0.004   | 5.000   | 25.000  | 0.74692 | 100  |  |
|         | 17.200   | 3.902     | 17.378 | -0.232 | -0.460   | 6.000   | 25.000  | 0.73368 | 500  |  |
|         | 17.521   | 3.994     | 17.735 | -0.396 | -0.116   | 3.000   | 25.000  | 0.75489 | 1000 |  |
|         | 17.313   | 4.039     | 17.727 | -0.416 | -0.290   | 5.000   | 25.000  | 0.75523 | 2000 |  |
| AR      | 20.360   | 6.489     | 20.700 | -0.194 | -1.033   | 6.000   | 30.000  | 0.88871 | 100  |  |
|         | 19.972   | 6.249     | 20.156 | -0.233 | -0.789   | 5.000   | 30.000  | 0.87690 | 500  |  |
|         | 19.881   | 6.488     | 20.152 | -0.210 | -0.926   | 4.000   | 30.000  | 0.88767 | 1000 |  |
|         | 19.808   | 6.390     | 20.098 | -0.210 | -0.890   | 4.000   | 30.000  | 0.88329 | 2000 |  |
|         | 19.792   | 6.235     | 20.127 | -0.257 | -0.761   | 3.000   | 30.000  | 0.87492 | 2000 |  |
|         | 20.210   | 6.517     | 19.750 | -0.183 | -0.853   | 6.000   | 30.000  | 0.89019 | 100  |  |
|         | 19.838   | 6.247     | 19.981 | -0.266 | -0.787   | 4.000   | 30.000  | 0.87721 | 500  |  |
|         | 19.971   | 6.347     | 20.444 | -0.277 | -0.777   | 4.000   | 30.000  | 0.88186 | 1000 |  |
|         | 19.859   | 6.386     | 20.071 | -0.226 | -0.857   | 3.000   | 30.000  | 0.88270 | 2000 |  |
| WK      | 28.890   | 5.297     | 30.167 | -0.617 | -0.728   | 16.000  | 35.000  | 0.86533 | 100  |  |
|         | 28.124   | 5.689     | 29.167 | -0.897 | +0.464   | 6.000   | 35.000  | 0.87623 | 500  |  |
|         | 27.961   | 5.573     | 28.715 | -0.756 | +0.003   | 9.000   | 35.000  | 0.86836 | 1000 |  |
|         | 28.198   | 5.659     | 29.248 | -0.958 | +0.670   | 5.000   | 35.000  | 0.87730 | 2000 |  |
|         | 27.995   | 5.737     | 29.097 | -0.871 | +0.345   | 5.000   | 35.000  | 0.87834 | 2000 |  |
|         | 27.760   | 6.535     | 29.611 | -0.891 | +0.131   | 8.000   | 35.000  | 0.90729 | 100  |  |
|         | 27.922   | 5.432     | 28.474 | -0.672 | -0.028   | 10.000  | 35.000  | 0.86024 | 500  |  |
|         | 28.185   | 5.397     | 28.964 | -0.779 | +0.176   | 9.000   | 35.000  | 0.86313 | 1000 |  |
|         | 27.959   | 5.639     | 28.843 | -0.888 | +0.556   | 5.000   | 35.000  | 0.87261 | 2000 |  |
| PC      | 12.130   | 2.308     | 12.643 | -0.952 | +1.082   | 4.000   | 15.000  | 0.62805 | 100  |  |
|         | 12.376   | 2.373     | 12.933 | -1.161 | +1.157   | 3.000   | 15.000  | 0.68457 | 500  |  |
|         | 12.128   | 2.684     | 12.860 | -1.132 | +0.803   | 3.000   | 15.000  | 0.74688 | 1000 |  |
|         | 12.317   | 2.558     | 12.988 | -1.303 | +1.463   | 2.000   | 15.000  | 0.73143 | 2000 |  |
|         | 12.354   | 2.462     | 12.964 | -1.132 | +0.873   | 3.000   | 15.000  | 0.70795 | 2000 |  |
|         | 12.440   | 2.660     | 13.333 | -1.203 | +1.062   | 4.000   | 15.000  | 0.76644 | 100  |  |
|         | 12.442   | 2.374     | 13.018 | -1.141 | +1.065   | 3.000   | 15.000  | 0.69273 | 500  |  |
|         | 12.371   | 2.406     | 12.982 | -1.277 | +1.653   | 2.000   | 15.000  | 0.69494 | 1000 |  |
|         | 12.292   | 2.568     | 12.954 | -1.316 | +1.643   | 1.000   | 15.000  | 0.73194 | 2000 |  |
| AS      | 17.350   | 4.730     | 18.167 | -0.526 | -0.347   | 4.000   | 25.000  | 0.81759 | 100  |  |
|         | 17.116   | 5.129     | 17.667 | -0.294 | -0.961   | 4.000   | 25.000  | 0.84600 | 500  |  |
|         | 17.048   | 4.992     | 17.321 | -0.325 | -0.607   | 0.000   | 25.000  | 0.83410 | 1000 |  |
|         | 17.158   | 4.966     | 17.508 | -0.310 | -0.763   | 0.000   | 25.000  | 0.83374 | 2000 |  |
|         | 17.079   | 4.966     | 17.410 | -0.329 | -0.643   | 0.000   | 25.000  | 0.83244 | 2000 |  |
|         | 16.650   | 5.422     | 17.000 | -0.227 | -0.944   | 5.000   | 25.000  | 0.85841 | 100  |  |
|         | 17.264   | 4.904     | 17.773 | -0.353 | -0.771   | 3.000   | 25.000  | 0.82928 | 500  |  |
|         | 17.151   | 5.122     | 17.663 | -0.399 | -0.694   | 0.000   | 25.000  | 0.84563 | 1000 |  |
|         | 16.979   | 4.982     | 17.217 | -0.298 | -0.741   | 0.000   | 25.000  | 0.83278 | 2000 |  |

Table B-20. (Concluded)

| Standard |        |           |        |        |          |         |         |         |      |  |
|----------|--------|-----------|--------|--------|----------|---------|---------|---------|------|--|
| Subtest  | Mean   | Deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| MK       | 15.160 | 5.118     | 14.500 | +0.228 | -0.468   | 3.000   | 25.000  | 0.83115 | 100  |  |
|          | 14.604 | 5.469     | 14.076 | +0.135 | -0.928   | 2.000   | 25.000  | 0.85572 | 500  |  |
|          | 14.489 | 5.605     | 13.973 | +0.108 | -0.859   | 0.000   | 25.000  | 0.86377 | 1000 |  |
|          | 14.535 | 5.490     | 13.813 | +0.198 | -0.918   | 0.000   | 25.000  | 0.85630 | 2000 |  |
|          | 14.704 | 5.529     | 14.210 | +0.116 | -0.907   | 0.000   | 25.000  | 0.85993 | 2000 |  |
|          | 14.310 | 5.983     | 13.722 | +0.285 | -0.965   | 2.000   | 25.000  | 0.88168 | 100  |  |
|          | 14.492 | 5.404     | 13.712 | +0.243 | -0.935   | 4.000   | 25.000  | 0.85085 | 500  |  |
|          | 14.603 | 5.561     | 14.038 | +0.120 | -0.922   | 0.000   | 25.000  | 0.86012 | 1000 |  |
|          | 14.872 | 5.429     | 14.305 | +0.145 | -0.933   | 1.000   | 25.000  | 0.85491 | 2000 |  |
| MC       | 16.300 | 4.282     | 16.278 | -0.090 | -0.858   | 6.000   | 24.000  | 0.75386 | 100  |  |
|          | 16.886 | 4.227     | 17.257 | -0.343 | -0.408   | 3.000   | 25.000  | 0.75511 | 500  |  |
|          | 16.808 | 4.164     | 17.159 | -0.350 | -0.330   | 3.000   | 25.000  | 0.74581 | 1000 |  |
|          | 16.849 | 4.281     | 17.217 | -0.445 | -0.259   | 2.000   | 25.000  | 0.76186 | 2000 |  |
|          | 16.781 | 4.257     | 17.052 | -0.373 | -0.365   | 2.000   | 25.000  | 0.75844 | 2000 |  |
|          | 17.460 | 3.820     | 17.600 | -0.224 | -0.381   | 8.000   | 25.000  | 0.70472 | 100  |  |
|          | 16.958 | 4.324     | 17.243 | -0.384 | -0.214   | 2.000   | 25.000  | 0.76898 | 500  |  |
|          | 16.938 | 4.259     | 17.218 | -0.442 | -0.177   | 2.000   | 25.000  | 0.76138 | 1000 |  |
|          | 16.931 | 4.173     | 17.256 | -0.388 | -0.317   | 0.000   | 25.000  | 0.74918 | 2000 |  |
| EI       | 13.370 | 3.714     | 13.786 | -0.309 | -0.569   | 4.000   | 20.000  | 0.76213 | 100  |  |
|          | 12.880 | 3.833     | 13.028 | -0.173 | -0.532   | 0.000   | 20.000  | 0.76638 | 500  |  |
|          | 12.862 | 3.651     | 12.927 | -0.136 | -0.560   | 0.000   | 20.000  | 0.73897 | 1000 |  |
|          | 13.031 | 3.762     | 13.045 | -0.143 | -0.616   | 2.000   | 20.000  | 0.75836 | 2000 |  |
|          | 13.105 | 3.780     | 13.222 | -0.201 | -0.614   | 2.000   | 20.000  | 0.76482 | 2000 |  |
|          | 13.070 | 3.880     | 13.643 | -0.326 | -0.731   | 4.000   | 20.000  | 0.77337 | 100  |  |
|          | 12.962 | 3.878     | 13.143 | -0.220 | -0.613   | 2.000   | 20.000  | 0.77333 | 500  |  |
|          | 12.920 | 3.833     | 13.081 | -0.188 | -0.527   | 1.000   | 20.000  | 0.76747 | 1000 |  |
|          | 12.852 | 3.748     | 12.972 | -0.172 | -0.580   | 2.000   | 20.000  | 0.75531 | 2000 |  |

**Table B-21. Descriptive Statistics of Random Samples of Whites, Form 17b**

| Subtest | Standard |           |        |        |          |         |         |         |      |  |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|--|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 17.920   | 4.211     | 18.417 | -0.346 | -0.684   | 7.000   | 24.000  | 0.78883 | 100  |  |
|         | 17.510   | 4.064     | 17.700 | -0.407 | -0.300   | 6.000   | 25.000  | 0.76267 | 500  |  |
|         | 17.487   | 4.120     | 17.944 | -0.525 | -0.148   | 4.000   | 25.000  | 0.77040 | 1000 |  |
|         | 17.292   | 4.144     | 17.617 | -0.343 | -0.467   | 4.000   | 25.000  | 0.76929 | 2000 |  |
|         | 17.416   | 4.003     | 17.744 | -0.441 | -0.087   | 0.000   | 25.000  | 0.75465 | 2000 |  |
|         | 17.460   | 3.963     | 18.045 | -0.657 | +0.278   | 4.000   | 24.000  | 0.74824 | 100  |  |
|         | 17.612   | 4.066     | 18.077 | -0.500 | -0.118   | 4.000   | 25.000  | 0.76696 | 500  |  |
|         | 17.286   | 3.948     | 17.444 | -0.316 | -0.345   | 4.000   | 25.000  | 0.74438 | 1000 |  |
|         | 17.373   | 4.172     | 17.816 | -0.442 | -0.285   | 4.000   | 25.000  | 0.77505 | 2000 |  |
| AR      | 18.690   | 6.832     | 19.833 | -0.238 | -1.071   | 3.000   | 30.000  | 0.89396 | 100  |  |
|         | 19.536   | 6.231     | 19.957 | -0.283 | -0.734   | 4.000   | 30.000  | 0.87671 | 500  |  |
|         | 19.537   | 6.138     | 19.982 | -0.295 | -0.738   | 3.000   | 30.000  | 0.87216 | 1000 |  |
|         | 19.537   | 6.161     | 20.014 | -0.261 | -0.747   | 2.000   | 30.000  | 0.87368 | 2000 |  |
|         | 19.222   | 6.136     | 19.662 | -0.196 | -0.774   | 3.000   | 30.000  | 0.86960 | 2000 |  |
|         | 19.090   | 5.958     | 18.900 | -0.112 | -0.769   | 3.000   | 30.000  | 0.85876 | 100  |  |
|         | 19.356   | 6.327     | 19.731 | -0.231 | -0.898   | 3.000   | 30.000  | 0.87998 | 500  |  |
|         | 19.269   | 6.311     | 19.730 | -0.278 | -0.683   | 2.000   | 30.000  | 0.87821 | 1000 |  |
|         | 19.504   | 6.167     | 20.070 | -0.256 | -0.770   | 2.000   | 30.000  | 0.87378 | 2000 |  |
| WK      | 29.010   | 5.217     | 30.722 | -0.839 | -0.132   | 14.000  | 35.000  | 0.86472 | 100  |  |
|         | 28.096   | 5.309     | 28.671 | -0.918 | +0.880   | 7.000   | 35.000  | 0.85933 | 500  |  |
|         | 28.117   | 5.141     | 29.006 | -0.914 | +0.801   | 2.000   | 35.000  | 0.84927 | 1000 |  |
|         | 27.869   | 5.340     | 28.820 | -0.788 | +0.189   | 8.000   | 35.000  | 0.85910 | 2000 |  |
|         | 28.166   | 5.223     | 29.079 | -0.835 | +0.367   | 5.000   | 35.000  | 0.85567 | 2000 |  |
|         | 28.770   | 5.009     | 29.875 | -0.899 | +0.258   | 13.000  | 35.000  | 0.84800 | 100  |  |
|         | 28.486   | 4.838     | 29.375 | -0.776 | +0.114   | 10.000  | 35.000  | 0.83556 | 500  |  |
|         | 27.874   | 5.327     | 28.824 | -0.928 | +0.804   | 2.000   | 35.000  | 0.85811 | 1000 |  |
|         | 28.239   | 5.308     | 29.323 | -0.928 | +0.555   | 6.000   | 35.000  | 0.86155 | 2000 |  |
| PC      | 12.430   | 2.180     | 12.857 | -0.855 | +0.181   | 6.000   | 15.000  | 0.66243 | 100  |  |
|         | 12.054   | 2.490     | 12.597 | -1.187 | +1.738   | 0.000   | 15.000  | 0.71091 | 500  |  |
|         | 12.246   | 2.327     | 12.775 | -1.061 | +1.080   | 3.000   | 15.000  | 0.67883 | 1000 |  |
|         | 12.240   | 2.401     | 12.783 | -1.146 | +1.265   | 2.000   | 15.000  | 0.70074 | 2000 |  |
|         | 12.247   | 2.368     | 12.741 | -1.056 | +1.021   | 3.000   | 15.000  | 0.69354 | 2000 |  |
|         | 12.780   | 2.111     | 13.389 | -1.117 | +0.673   | 6.000   | 15.000  | 0.66171 | 100  |  |
|         | 12.186   | 2.528     | 12.698 | -1.392 | +2.470   | 0.000   | 15.000  | 0.73370 | 500  |  |
|         | 12.225   | 2.296     | 12.634 | -1.029 | +1.103   | 3.000   | 15.000  | 0.66675 | 1000 |  |
|         | 12.219   | 2.431     | 12.742 | -1.135 | +1.316   | 0.000   | 15.000  | 0.71017 | 2000 |  |
| AS      | 16.650   | 5.022     | 16.643 | 0.109  | -0.953   | 5.000   | 25.000  | 0.82968 | 100  |  |
|         | 16.758   | 5.086     | 17.052 | -0.236 | -0.841   | 5.000   | 25.000  | 0.83672 | 500  |  |
|         | 16.781   | 5.041     | 17.061 | -0.263 | -0.841   | 4.000   | 25.000  | 0.83344 | 1000 |  |
|         | 16.799   | 5.066     | 17.013 | -0.259 | -0.731   | 2.000   | 25.000  | 0.83464 | 2000 |  |
|         | 16.875   | 4.998     | 17.048 | -0.214 | -0.816   | 2.000   | 25.000  | 0.83153 | 2000 |  |
|         | 17.260   | 4.886     | 17.500 | -0.175 | -0.969   | 8.000   | 25.000  | 0.82682 | 100  |  |
|         | 16.778   | 4.942     | 17.288 | -0.258 | -0.733   | 2.000   | 25.000  | 0.82504 | 500  |  |
|         | 17.007   | 4.927     | 17.330 | -0.280 | -0.751   | 3.000   | 25.000  | 0.82648 | 1000 |  |
|         | 16.978   | 5.063     | 17.331 | -0.270 | -0.818   | 3.000   | 25.000  | 0.83720 | 2000 |  |

Table B-21. (Concluded)

| Standard |        |           |        |        |          |         |         |         |      |  |
|----------|--------|-----------|--------|--------|----------|---------|---------|---------|------|--|
| Subtest  | Mean   | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| MK       | 14.470 | 5.246     | 13.833 | +0.283 | -0.809   | 2.000   | 25.000  | 0.83702 | 100  |  |
|          | 14.452 | 5.425     | 14.106 | +0.092 | -0.873   | 0.000   | 25.000  | 0.85144 | 500  |  |
|          | 14.361 | 5.311     | 13.733 | +0.185 | -0.845   | 2.000   | 25.000  | 0.84343 | 1000 |  |
|          | 14.262 | 5.334     | 13.738 | +0.184 | -0.799   | 1.000   | 25.000  | 0.84457 | 2000 |  |
|          | 14.395 | 5.479     | 13.893 | +0.143 | -0.948   | 0.000   | 25.000  | 0.85445 | 2000 |  |
|          | 14.880 | 5.319     | 14.500 | +0.192 | -1.076   | 5.000   | 25.000  | 0.84682 | 100  |  |
|          | 14.520 | 5.411     | 13.986 | +0.138 | -0.926   | 3.000   | 25.000  | 0.85151 | 500  |  |
|          | 14.580 | 5.464     | 14.167 | +0.077 | -0.865   | 1.000   | 25.000  | 0.85394 | 1000 |  |
|          | 14.184 | 5.425     | 13.644 | +0.194 | -0.894   | 0.000   | 25.000  | 0.85078 | 2000 |  |
|          |        |           |        |        |          |         |         |         |      |  |
| MC       | 16.610 | 3.897     | 16.682 | -0.220 | -0.357   | 7.000   | 25.000  | 0.70921 | 100  |  |
|          | 16.778 | 4.098     | 17.148 | -0.513 | -0.140   | 4.000   | 25.000  | 0.73929 | 500  |  |
|          | 17.258 | 4.024     | 17.595 | -0.416 | -0.196   | 4.000   | 25.000  | 0.73469 | 1000 |  |
|          | 16.839 | 4.096     | 17.134 | -0.318 | -0.409   | 3.000   | 25.000  | 0.73877 | 2000 |  |
|          | 17.007 | 4.099     | 17.197 | -0.296 | -0.444   | 3.000   | 25.000  | 0.74203 | 2000 |  |
|          | 16.840 | 4.568     | 17.700 | -0.342 | -0.784   | 4.000   | 25.000  | 0.79576 | 100  |  |
|          | 16.982 | 4.012     | 17.183 | -0.150 | -0.638   | 7.000   | 25.000  | 0.72704 | 500  |  |
|          | 17.043 | 4.201     | 17.399 | -0.455 | -0.168   | 3.000   | 25.000  | 0.75716 | 1000 |  |
|          | 16.973 | 4.063     | 17.169 | -0.396 | -0.099   | 0.000   | 25.000  | 0.73551 | 2000 |  |
|          |        |           |        |        |          |         |         |         |      |  |
| EI       | 12.550 | 4.111     | 12.800 | -0.066 | -0.728   | 3.000   | 20.000  | 0.79889 | 100  |  |
|          | 12.780 | 3.840     | 12.679 | -0.079 | -0.496   | 1.000   | 20.000  | 0.76813 | 500  |  |
|          | 12.732 | 3.802     | 12.618 | -0.089 | -0.587   | 3.000   | 20.000  | 0.75894 | 1000 |  |
|          | 12.732 | 3.771     | 12.809 | -0.142 | -0.537   | 0.000   | 20.000  | 0.75476 | 2000 |  |
|          | 12.788 | 3.750     | 12.778 | -0.099 | -0.601   | 0.000   | 20.000  | 0.75453 | 2000 |  |
|          | 12.590 | 3.758     | 12.417 | +0.084 | -0.761   | 5.000   | 20.000  | 0.74858 | 100  |  |
|          | 12.694 | 3.545     | 12.521 | -0.027 | -0.534   | 3.000   | 20.000  | 0.71874 | 500  |  |
|          | 12.856 | 3.651     | 12.671 | +0.022 | -0.678   | 3.000   | 20.000  | 0.73652 | 1000 |  |
|          | 12.772 | 3.833     | 12.797 | -0.133 | -0.614   | 0.000   | 20.000  | 0.76569 | 2000 |  |
|          |        |           |        |        |          |         |         |         |      |  |

**Table B-22. Descriptive Statistics of Random Samples of Blacks, Form 15a**

|         |        | Standard  |        |        |          |         |         |         |      |  |
|---------|--------|-----------|--------|--------|----------|---------|---------|---------|------|--|
| Subtest | Mean   | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 13.040 | 3.393     | 13.000 | +0.149 | +0.817   | 3.000   | 24.000  | 0.58528 | 100  |  |
|         | 13.486 | 3.801     | 13.080 | +0.443 | -0.219   | 4.000   | 24.000  | 0.67340 | 500  |  |
|         | 13.418 | 3.794     | 13.295 | +0.261 | -0.185   | 3.000   | 24.000  | 0.67276 | 1000 |  |
|         | 13.351 | 3.874     | 13.082 | +0.327 | -0.089   | 2.000   | 25.000  | 0.68759 | 2000 |  |
| AR      | 13.880 | 4.457     | 13.227 | +0.394 | -0.069   | 4.000   | 25.000  | 0.70300 | 100  |  |
|         | 14.302 | 4.847     | 13.900 | +0.463 | +0.269   | 3.000   | 29.000  | 0.75156 | 500  |  |
|         | 14.370 | 4.936     | 13.994 | +0.461 | +0.023   | 3.000   | 30.000  | 0.76082 | 1000 |  |
|         | 14.346 | 4.986     | 13.852 | +0.528 | +0.099   | 2.000   | 30.000  | 0.76676 | 2000 |  |
| WK      | 22.270 | 6.650     | 22.700 | -0.160 | -0.797   | 7.000   | 34.000  | 0.86792 | 100  |  |
|         | 22.710 | 6.537     | 23.278 | -0.291 | -0.654   | 6.000   | 35.000  | 0.86760 | 500  |  |
|         | 22.592 | 6.589     | 23.173 | -0.277 | -0.605   | 3.000   | 35.000  | 0.86798 | 1000 |  |
|         | 22.651 | 6.546     | 23.306 | -0.305 | -0.653   | 5.000   | 35.000  | 0.86604 | 2000 |  |
| PC      | 10.330 | 3.124     | 10.700 | -0.356 | -0.784   | 2.000   | 15.000  | 0.74330 | 100  |  |
|         | 10.928 | 2.948     | 11.537 | -0.796 | +0.191   | 1.000   | 15.000  | 0.74280 | 500  |  |
|         | 10.657 | 2.923     | 11.025 | -0.559 | -0.356   | 1.000   | 15.000  | 0.71973 | 1000 |  |
|         | 10.865 | 2.831     | 11.298 | -0.669 | -0.071   | 0.000   | 15.000  | 0.71119 | 2000 |  |
| AS      | 10.770 | 3.798     | 10.423 | +0.535 | -0.059   | 4.000   | 23.000  | 0.63235 | 100  |  |
|         | 10.714 | 3.712     | 10.103 | +0.647 | +0.347   | 2.000   | 22.000  | 0.62491 | 500  |  |
|         | 10.887 | 3.909     | 10.520 | +0.608 | +0.269   | 2.000   | 23.000  | 0.66139 | 1000 |  |
|         | 10.855 | 3.899     | 10.367 | +0.572 | +0.125   | 1.000   | 24.000  | 0.66088 | 2000 |  |
| MK      | 11.600 | 4.708     | 10.667 | +0.716 | +0.478   | 3.000   | 25.000  | 0.78655 | 100  |  |
|         | 11.646 | 4.773     | 10.900 | +0.718 | +0.048   | 2.000   | 25.000  | 0.78931 | 500  |  |
|         | 11.621 | 4.629     | 10.829 | +0.607 | -0.168   | 2.000   | 25.000  | 0.77576 | 1000 |  |
|         | 11.659 | 4.732     | 10.976 | +0.569 | -0.246   | 2.000   | 25.000  | 0.78509 | 2000 |  |
| MC      | 11.920 | 4.364     | 11.250 | +0.505 | -0.306   | 3.000   | 23.000  | 0.72941 | 100  |  |
|         | 12.036 | 3.829     | 11.931 | +0.142 | -0.013   | 0.000   | 24.000  | 0.63845 | 500  |  |
|         | 12.182 | 4.012     | 11.856 | +0.322 | -0.224   | 1.000   | 24.000  | 0.67239 | 1000 |  |
|         | 12.099 | 4.071     | 11.820 | +0.244 | -0.256   | 0.000   | 25.000  | 0.68377 | 2000 |  |
| EI      | 9.550  | 3.083     | 9.029  | +0.996 | +1.270   | 4.000   | 19.000  | 0.57045 | 100  |  |
|         | 9.684  | 2.887     | 9.445  | +0.439 | +0.564   | 2.000   | 20.000  | 0.51249 | 500  |  |
|         | 9.598  | 2.879     | 9.301  | +0.512 | +0.484   | 2.000   | 20.000  | 0.50888 | 1000 |  |
|         | 9.664  | 2.977     | 9.331  | +0.558 | +0.426   | 2.000   | 20.000  | 0.54372 | 2000 |  |

**Table B-23. Descriptive Statistics of Random Samples of Blacks, Form 15b**

| Standard |        |           |        |        |          |         |         |         |      |  |
|----------|--------|-----------|--------|--------|----------|---------|---------|---------|------|--|
| Subtest  | Mean   | Deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS       | 13.660 | 3.968     | 13.214 | +0.541 | -0.366   | 6.000   | 23.000  | 0.70736 | 100  |  |
|          | 13.410 | 3.808     | 13.021 | +0.351 | -0.268   | 5.000   | 24.000  | 0.67584 | 500  |  |
|          | 13.553 | 3.958     | 13.214 | +0.316 | -0.156   | 0.000   | 24.000  | 0.69775 | 1000 |  |
|          | 13.510 | 3.923     | 13.225 | +0.290 | -0.191   | 0.000   | 25.000  | 0.69624 | 2000 |  |
| AR       | 13.500 | 4.284     | 13.100 | +0.344 | -0.340   | 5.000   | 25.000  | 0.69141 | 100  |  |
|          | 14.244 | 5.139     | 13.544 | +0.642 | +0.144   | 3.000   | 30.000  | 0.79377 | 500  |  |
|          | 14.508 | 5.233     | 13.674 | +0.582 | -0.143   | 2.000   | 30.000  | 0.80030 | 1000 |  |
|          | 14.465 | 5.185     | 13.654 | +0.582 | -0.159   | 3.000   | 30.000  | 0.79571 | 2000 |  |
| WK       | 23.510 | 6.503     | 24.000 | -0.307 | -0.568   | 7.000   | 35.000  | 0.87346 | 100  |  |
|          | 22.950 | 5.637     | 23.346 | -0.235 | -0.376   | 8.000   | 35.000  | 0.82015 | 500  |  |
|          | 22.971 | 5.754     | 23.057 | -0.121 | -0.587   | 5.000   | 35.000  | 0.82901 | 1000 |  |
|          | 22.952 | 5.740     | 23.100 | -0.171 | -0.453   | 5.000   | 35.000  | 0.82708 | 2000 |  |
| PC       | 10.240 | 3.337     | 11.000 | -0.707 | -0.302   | 1.000   | 15.000  | 0.77958 | 100  |  |
|          | 10.766 | 2.990     | 11.306 | -0.634 | -0.393   | 1.000   | 15.000  | 0.74180 | 500  |  |
|          | 10.912 | 2.914     | 11.484 | -0.779 | +0.043   | 1.000   | 15.000  | 0.73144 | 1000 |  |
|          | 10.837 | 2.880     | 11.351 | -0.690 | -0.055   | 1.000   | 15.000  | 0.72209 | 2000 |  |
| AS       | 10.670 | 4.463     | 10.250 | +0.559 | +0.246   | 2.000   | 24.000  | 0.75312 | 100  |  |
|          | 10.684 | 3.942     | 10.436 | +0.441 | +0.248   | 1.000   | 24.000  | 0.66895 | 500  |  |
|          | 10.573 | 3.864     | 10.187 | +0.523 | +0.181   | 1.000   | 24.000  | 0.65420 | 1000 |  |
|          | 10.537 | 3.823     | 10.109 | +0.551 | +0.202   | 1.000   | 25.000  | 0.64640 | 2000 |  |
| MK       | 11.960 | 4.866     | 11.167 | +0.557 | -0.494   | 3.000   | 24.000  | 0.80083 | 100  |  |
|          | 11.696 | 4.592     | 11.151 | +0.468 | -0.264   | 0.000   | 25.000  | 0.76934 | 500  |  |
|          | 11.519 | 4.578     | 10.657 | +0.606 | -0.180   | 2.000   | 25.000  | 0.77010 | 1000 |  |
|          | 11.599 | 4.699     | 10.913 | +0.534 | -0.208   | 0.000   | 25.000  | 0.78225 | 2000 |  |
| MC       | 12.470 | 3.791     | 12.100 | +0.376 | +0.316   | 3.000   | 24.000  | 0.62901 | 100  |  |
|          | 11.578 | 3.964     | 11.209 | +0.370 | +0.154   | 1.000   | 24.000  | 0.66072 | 500  |  |
|          | 11.974 | 3.891     | 11.863 | +0.257 | -0.098   | 0.000   | 25.000  | 0.65100 | 1000 |  |
|          | 11.920 | 3.934     | 11.716 | +0.188 | -0.176   | 0.000   | 25.000  | 0.65734 | 2000 |  |
| EI       | 9.210  | 2.504     | 9.357  | +0.552 | +0.878   | 5.000   | 17.000  | 0.32770 | 100  |  |
|          | 9.810  | 3.065     | 9.650  | +0.424 | +0.348   | 0.000   | 19.000  | 0.57302 | 500  |  |
|          | 9.569  | 3.128     | 9.339  | +0.365 | +0.676   | 0.000   | 20.000  | 0.59205 | 1000 |  |
|          | 9.581  | 2.952     | 9.362  | +0.424 | +0.589   | 0.000   | 20.000  | 0.53779 | 2000 |  |

**Table B-24. Descriptive Statistics of Random Samples of Blacks, Form 15c**

| Subtest | Standard |           |        |        |          |         |         |         |      |  |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|--|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 12.020   | 3.496     | 11.625 | +0.242 | -0.487   | 5.000   | 21.000  | 0.59117 | 100  |  |
|         | 13.172   | 3.787     | 12.833 | +0.326 | +0.354   | 0.000   | 25.000  | 0.66134 | 500  |  |
|         | 13.056   | 3.671     | 12.850 | +0.299 | -0.092   | 3.000   | 25.000  | 0.63907 | 1000 |  |
|         | 12.997   | 3.761     | 12.714 | +0.333 | -0.038   | 3.000   | 25.000  | 0.65503 | 2000 |  |
| AR      | 13.980   | 5.572     | 13.167 | +0.695 | -0.035   | 5.000   | 30.000  | 0.82548 | 100  |  |
|         | 13.468   | 4.954     | 12.827 | +0.591 | -0.070   | 3.000   | 30.000  | 0.77118 | 500  |  |
|         | 13.832   | 5.183     | 13.152 | +0.617 | +0.044   | 3.000   | 30.000  | 0.78865 | 1000 |  |
|         | 13.909   | 5.144     | 13.162 | +0.603 | +0.048   | 3.000   | 30.000  | 0.78813 | 2000 |  |
| WK      | 23.330   | 5.267     | 22.700 | +0.039 | -0.256   | 8.000   | 35.000  | 0.79061 | 100  |  |
|         | 23.288   | 5.452     | 23.280 | -0.391 | +0.256   | 0.000   | 35.000  | 0.80970 | 500  |  |
|         | 23.199   | 5.939     | 23.234 | -0.216 | -0.407   | 5.000   | 35.000  | 0.84030 | 1000 |  |
|         | 23.207   | 5.914     | 23.406 | -0.290 | -0.324   | 0.000   | 35.000  | 0.83903 | 2000 |  |
| PC      | 10.190   | 2.707     | 10.300 | -0.255 | -0.376   | 3.000   | 15.000  | 0.63510 | 100  |  |
|         | 9.904    | 2.853     | 10.307 | -0.439 | -0.541   | 2.000   | 15.000  | 0.66718 | 500  |  |
|         | 9.980    | 2.763     | 10.227 | -0.385 | -0.467   | 2.000   | 15.000  | 0.64578 | 1000 |  |
|         | 9.864    | 2.752     | 10.132 | -0.409 | -0.327   | 0.000   | 15.000  | 0.64109 | 2000 |  |
| AS      | 11.100   | 4.111     | 10.667 | +0.685 | +0.704   | 3.000   | 24.000  | 0.70473 | 100  |  |
|         | 11.126   | 3.959     | 10.585 | +0.625 | +0.256   | 2.000   | 24.000  | 0.67570 | 500  |  |
|         | 10.891   | 3.897     | 10.433 | +0.569 | +0.135   | 0.000   | 24.000  | 0.66550 | 1000 |  |
|         | 10.974   | 3.845     | 10.513 | +0.586 | +0.235   | 0.000   | 24.000  | 0.65393 | 2000 |  |
| MK      | 12.480   | 4.929     | 11.286 | +0.691 | -0.116   | 3.000   | 25.000  | 0.80206 | 100  |  |
|         | 11.346   | 4.498     | 10.594 | +0.632 | -0.192   | 3.000   | 25.000  | 0.76307 | 500  |  |
|         | 11.324   | 4.645     | 10.472 | +0.598 | -0.204   | 1.000   | 24.000  | 0.77740 | 1000 |  |
|         | 11.459   | 4.753     | 10.616 | +0.626 | -0.174   | 0.000   | 25.000  | 0.78921 | 2000 |  |
| MC      | 11.530   | 3.463     | 10.889 | +0.463 | +0.014   | 5.000   | 22.000  | 0.54385 | 100  |  |
|         | 11.038   | 3.842     | 10.730 | +0.474 | -0.037   | 0.000   | 22.000  | 0.64904 | 500  |  |
|         | 11.191   | 3.944     | 10.625 | +0.570 | -0.117   | 3.000   | 24.000  | 0.66481 | 1000 |  |
|         | 11.167   | 3.932     | 10.677 | +0.550 | -0.027   | 0.000   | 24.000  | 0.66282 | 2000 |  |
| EI      | 8.700    | 2.834     | 8.300  | +0.513 | -0.001   | 3.000   | 16.000  | 0.49435 | 100  |  |
|         | 9.214    | 3.171     | 9.010  | +0.309 | +0.110   | 1.000   | 19.000  | 0.60209 | 500  |  |
|         | 9.164    | 3.149     | 8.953  | +0.286 | -0.041   | 0.000   | 19.000  | 0.59764 | 1000 |  |
|         | 9.060    | 3.163     | 8.816  | +0.269 | -0.142   | 0.000   | 19.000  | 0.60075 | 2000 |  |

**Table B-24. Descriptive Statistics of Random Samples of Blacks, Form 16a**

| Subtest | Standard |           |        |        |          |         |         |         |      |  |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|--|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 14.220   | 4.320     | 14.583 | +0.078 | -0.532   | 5.000   | 24.000  | 0.75421 | 100  |  |
|         | 12.894   | 4.237     | 12.851 | +0.189 | -0.373   | 3.000   | 25.000  | 0.74990 | 500  |  |
|         | 13.078   | 4.194     | 12.827 | +0.283 | -0.452   | 4.000   | 25.000  | 0.74085 | 1000 |  |
|         | 13.158   | 4.203     | 12.904 | +0.286 | -0.382   | 2.000   | 25.000  | 0.74438 | 2000 |  |
| AR      | 14.550   | 5.396     | 14.300 | +0.165 | -0.611   | 3.000   | 27.000  | 0.80265 | 100  |  |
|         | 14.628   | 5.178     | 14.088 | +0.270 | -0.606   | 4.000   | 28.000  | 0.78247 | 500  |  |
|         | 14.613   | 5.059     | 14.090 | +0.377 | -0.350   | 3.000   | 30.000  | 0.77275 | 1000 |  |
|         | 14.785   | 5.016     | 14.391 | +0.294 | -0.304   | 3.000   | 30.000  | 0.76953 | 2000 |  |
| WK      | 23.390   | 5.877     | 23.500 | -0.334 | -0.219   | 6.000   | 35.000  | 0.84619 | 100  |  |
|         | 22.940   | 5.782     | 23.111 | -0.265 | -0.438   | 5.000   | 35.000  | 0.83404 | 500  |  |
|         | 23.253   | 5.503     | 23.439 | -0.178 | -0.434   | 5.000   | 35.000  | 0.81874 | 1000 |  |
|         | 23.027   | 5.808     | 23.297 | -0.251 | -0.421   | 2.000   | 35.000  | 0.83732 | 2000 |  |
| PC      | 10.770   | 3.021     | 11.577 | -0.573 | -0.734   | 3.000   | 15.000  | 0.75045 | 100  |  |
|         | 10.610   | 3.112     | 11.190 | -0.684 | -0.161   | 1.000   | 15.000  | 0.75965 | 500  |  |
|         | 10.558   | 2.978     | 10.966 | -0.613 | -0.164   | 1.000   | 15.000  | 0.72750 | 1000 |  |
|         | 10.637   | 3.031     | 11.094 | -0.583 | -0.326   | 0.000   | 15.000  | 0.74500 | 2000 |  |
| AS      | 9.830    | 5.313     | 8.500  | +0.978 | +0.112   | 2.000   | 23.000  | 0.83406 | 100  |  |
|         | 9.562    | 4.368     | 8.867  | +0.704 | +0.306   | 1.000   | 24.000  | 0.74364 | 500  |  |
|         | 9.654    | 4.372     | 8.900  | +0.645 | +0.012   | 1.000   | 24.000  | 0.74338 | 1000 |  |
|         | 9.575    | 4.460     | 8.837  | +0.715 | +0.233   | 0.000   | 25.000  | 0.75581 | 2000 |  |
| MK      | 11.480   | 4.717     | 10.833 | +0.460 | -0.396   | 2.000   | 24.000  | 0.77847 | 100  |  |
|         | 11.758   | 4.914     | 10.689 | +0.696 | -0.237   | 3.000   | 25.000  | 0.80052 | 500  |  |
|         | 11.937   | 4.874     | 11.059 | +0.593 | -0.312   | 1.000   | 25.000  | 0.79514 | 1000 |  |
|         | 11.842   | 4.873     | 10.973 | +0.589 | -0.339   | 0.000   | 25.000  | 0.79597 | 2000 |  |
| MC      | 12.690   | 4.208     | 12.773 | +0.029 | -0.708   | 4.000   | 22.000  | 0.70177 | 100  |  |
|         | 12.440   | 3.883     | 12.172 | +0.178 | -0.314   | 2.000   | 24.000  | 0.64193 | 500  |  |
|         | 12.316   | 3.939     | 12.093 | +0.283 | -0.225   | 2.000   | 24.000  | 0.65238 | 1000 |  |
|         | 12.297   | 4.027     | 12.112 | +0.173 | -0.285   | 0.000   | 24.000  | 0.66943 | 2000 |  |
| EI      | 9.460    | 3.713     | 9.591  | +0.540 | +0.298   | 2.000   | 20.000  | 0.69997 | 100  |  |
|         | 9.686    | 3.368     | 9.435  | +0.295 | -0.087   | 0.000   | 20.000  | 0.62975 | 500  |  |
|         | 9.794    | 3.615     | 9.447  | +0.402 | -0.150   | 0.000   | 20.000  | 0.68528 | 1000 |  |
|         | 9.784    | 3.526     | 9.467  | +0.438 | -0.053   | 1.000   | 20.000  | 0.66868 | 2000 |  |

**Table B-26. Descriptive Statistics of Random Samples of Blacks, Form 16b**

| Subtest | Standard |           |        |        |          |         |         |         |      |  |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|--|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 13.390   | 4.254     | 12.955 | +0.354 | +0.205   | 4.000   | 24.000  | 0.74386 | 100  |  |
|         | 13.250   | 4.193     | 13.056 | +0.207 | -0.382   | 4.000   | 24.000  | 0.74298 | 500  |  |
|         | 13.389   | 4.235     | 13.160 | +0.182 | -0.441   | 3.000   | 25.000  | 0.75174 | 1000 |  |
|         | 13.180   | 4.273     | 12.905 | +0.234 | -0.468   | 3.000   | 25.000  | 0.75356 | 2000 |  |
| AR      | 14.730   | 5.436     | 13.409 | +0.743 | -0.180   | 5.000   | 29.000  | 0.80580 | 100  |  |
|         | 14.434   | 5.248     | 13.803 | +0.569 | -0.068   | 3.000   | 30.000  | 0.79424 | 500  |  |
|         | 14.063   | 5.292     | 13.183 | +0.632 | -0.065   | 3.000   | 30.000  | 0.79848 | 1000 |  |
|         | 14.172   | 5.328     | 13.403 | +0.532 | -0.183   | 1.000   | 30.000  | 0.80170 | 2000 |  |
| WK      | 23.190   | 5.829     | 23.100 | -0.165 | -0.596   | 10.000  | 35.000  | 0.85386 | 100  |  |
|         | 23.838   | 5.315     | 23.947 | -0.305 | -0.024   | 5.000   | 35.000  | 0.82824 | 500  |  |
|         | 23.857   | 5.320     | 24.061 | -0.356 | +0.014   | 5.000   | 35.000  | 0.82626 | 1000 |  |
|         | 23.780   | 5.420     | 24.031 | -0.354 | -0.086   | 4.000   | 35.000  | 0.83279 | 2000 |  |
| PC      | 10.760   | 3.026     | 11.167 | -0.724 | +0.530   | 0.000   | 15.000  | 0.74486 | 100  |  |
|         | 10.650   | 2.788     | 10.923 | -0.503 | -0.244   | 1.000   | 15.000  | 0.68922 | 500  |  |
|         | 10.642   | 2.729     | 10.854 | -0.457 | -0.203   | 1.000   | 15.000  | 0.66907 | 1000 |  |
|         | 10.608   | 2.796     | 10.924 | -0.529 | -0.187   | 0.000   | 15.000  | 0.68791 | 2000 |  |
| AS      | 8.530    | 4.026     | 7.667  | +0.985 | +0.807   | 2.000   | 21.000  | 0.70254 | 100  |  |
|         | 9.708    | 4.468     | 9.202  | +0.580 | -0.054   | 0.000   | 23.000  | 0.75800 | 500  |  |
|         | 9.603    | 4.478     | 8.948  | +0.656 | +0.079   | 0.000   | 24.000  | 0.75857 | 1000 |  |
|         | 9.716    | 4.436     | 9.028  | +0.656 | +0.105   | 0.000   | 25.000  | 0.75226 | 2000 |  |
| MK      | 10.620   | 4.526     | 9.864  | +0.894 | +0.348   | 4.000   | 23.000  | 0.76052 | 100  |  |
|         | 11.820   | 4.867     | 11.100 | +0.571 | -0.284   | 1.000   | 24.000  | 0.79507 | 500  |  |
|         | 11.736   | 4.887     | 10.837 | +0.625 | -0.287   | 1.000   | 25.000  | 0.79673 | 1000 |  |
|         | 11.913   | 4.965     | 11.026 | +0.602 | -0.306   | 1.000   | 25.000  | 0.80386 | 2000 |  |
| MC      | 12.020   | 4.154     | 12.318 | +0.019 | -0.088   | 3.000   | 23.000  | 0.68460 | 100  |  |
|         | 12.538   | 4.027     | 12.250 | +0.165 | -0.275   | 0.000   | 24.000  | 0.66676 | 500  |  |
|         | 12.441   | 4.066     | 12.104 | +0.187 | -0.420   | 1.000   | 25.000  | 0.67352 | 1000 |  |
|         | 12.479   | 4.016     | 12.309 | +0.195 | -0.350   | 1.000   | 25.000  | 0.66532 | 2000 |  |
| EI      | 9.890    | 3.590     | 9.192  | +0.498 | -0.656   | 4.000   | 18.000  | 0.67988 | 100  |  |
|         | 9.866    | 3.409     | 9.726  | +0.296 | -0.050   | 0.000   | 20.000  | 0.63999 | 500  |  |
|         | 9.625    | 3.464     | 9.483  | +0.321 | -0.050   | 1.000   | 20.000  | 0.65177 | 1000 |  |
|         | 9.761    | 3.485     | 9.601  | +0.308 | -0.196   | 0.000   | 20.000  | 0.65798 | 2000 |  |

**Table B-27. Descriptive Statistics of Random Samples of Blacks, Form 17a**

| Subtest | Standard |           |        |        |          |         |         |         |      |  |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|--|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 13.730   | 4.206     | 13.667 | +0.184 | -0.518   | 6.000   | 23.000  | 0.71932 | 100  |  |
|         | 13.114   | 4.164     | 12.969 | +0.214 | -0.339   | 4.000   | 24.000  | 0.71541 | 500  |  |
|         | 13.183   | 4.093     | 12.930 | +0.192 | -0.347   | 2.000   | 25.000  | 0.70167 | 1000 |  |
|         | 12.988   | 4.011     | 12.833 | +0.201 | -0.263   | 2.000   | 25.000  | 0.68698 | 2000 |  |
| AR      | 14.320   | 4.882     | 13.929 | +0.354 | -0.392   | 5.000   | 28.000  | 0.75184 | 100  |  |
|         | 14.154   | 5.733     | 13.203 | +0.636 | -0.208   | 3.000   | 30.000  | 0.82950 | 500  |  |
|         | 14.152   | 5.465     | 13.516 | +0.516 | -0.302   | 2.000   | 30.000  | 0.81089 | 1000 |  |
|         | 13.934   | 5.466     | 13.026 | +0.615 | -0.131   | 2.000   | 30.000  | 0.80996 | 2000 |  |
| WK      | 21.860   | 6.291     | 21.900 | -0.284 | -0.597   | 5.000   | 33.000  | 0.84783 | 100  |  |
|         | 22.718   | 6.516     | 22.964 | -0.203 | -0.545   | 5.000   | 35.000  | 0.86864 | 500  |  |
|         | 22.645   | 6.459     | 22.775 | -0.148 | -0.647   | 6.000   | 35.000  | 0.86472 | 1000 |  |
|         | 22.932   | 6.446     | 23.161 | -0.187 | -0.583   | 5.000   | 35.000  | 0.86510 | 2000 |  |
| PC      | 10.780   | 2.953     | 11.313 | -1.025 | +1.267   | 0.000   | 15.000  | 0.73700 | 100  |  |
|         | 10.392   | 3.023     | 10.737 | -0.570 | -0.209   | 1.000   | 15.000  | 0.72799 | 500  |  |
|         | 10.392   | 3.060     | 10.841 | -0.568 | -0.328   | 0.000   | 15.000  | 0.73906 | 1000 |  |
|         | 10.509   | 2.975     | 10.917 | -0.572 | -0.262   | 0.000   | 15.000  | 0.72521 | 2000 |  |
| AS      | 11.040   | 3.897     | 10.688 | +0.745 | +0.347   | 4.000   | 21.000  | 0.67943 | 100  |  |
|         | 10.990   | 4.046     | 10.444 | +0.697 | +0.740   | 0.000   | 25.000  | 0.69451 | 500  |  |
|         | 10.840   | 4.103     | 10.255 | +0.699 | +0.397   | 2.000   | 25.000  | 0.70462 | 1000 |  |
|         | 10.773   | 3.884     | 10.358 | +0.638 | +0.354   | 2.000   | 25.000  | 0.66703 | 2000 |  |
| MK      | 12.780   | 4.373     | 12.056 | +0.645 | -0.162   | 5.000   | 24.000  | 0.75955 | 100  |  |
|         | 12.476   | 4.911     | 11.944 | +0.366 | -0.316   | 0.000   | 25.000  | 0.80891 | 500  |  |
|         | 12.358   | 4.812     | 11.727 | +0.441 | -0.345   | 2.000   | 25.000  | 0.80035 | 1000 |  |
|         | 12.108   | 4.532     | 11.607 | +0.442 | -0.098   | 0.000   | 25.000  | 0.77165 | 2000 |  |
| MC      | 12.570   | 3.916     | 12.346 | +0.092 | -0.507   | 5.000   | 21.000  | 0.67506 | 100  |  |
|         | 12.528   | 3.962     | 12.465 | +0.042 | -0.221   | 2.000   | 23.000  | 0.67398 | 500  |  |
|         | 12.767   | 3.859     | 12.628 | +0.071 | -0.025   | 0.000   | 23.000  | 0.65402 | 1000 |  |
|         | 12.748   | 3.833     | 12.736 | +0.095 | -0.047   | 0.000   | 25.000  | 0.65104 | 2000 |  |
| EI      | 10.000   | 3.169     | 9.808  | +0.391 | +0.588   | 2.000   | 20.000  | 0.60362 | 100  |  |
|         | 9.454    | 3.191     | 9.254  | +0.403 | +0.238   | 2.000   | 20.000  | 0.60266 | 500  |  |
|         | 9.570    | 3.419     | 9.257  | +0.444 | +0.176   | 0.000   | 20.000  | 0.65724 | 1000 |  |
|         | 9.587    | 3.334     | 9.219  | +0.452 | +0.163   | 0.000   | 20.000  | 0.63898 | 2000 |  |

**Table B-28. Descriptive Statistics of Random Samples of Blacks, Form 17b**

| Subtest | Standard |           |        |        |          |         |         |         |      |  |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|--|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 13.440   | 4.140     | 12.955 | +0.422 | -0.091   | 4.000   | 25.000  | 0.71349 | 100  |  |
|         | 13.038   | 4.042     | 12.690 | +0.344 | -0.277   | 4.000   | 25.000  | 0.69482 | 500  |  |
|         | 13.130   | 3.986     | 12.796 | +0.247 | -0.325   | 2.000   | 25.000  | 0.68538 | 1000 |  |
|         | 13.104   | 4.008     | 12.851 | +0.241 | -0.243   | 2.000   | 25.000  | 0.68989 | 2000 |  |
| AR      | 13.660   | 4.753     | 12.500 | +0.333 | -0.536   | 5.000   | 25.000  | 0.74659 | 100  |  |
|         | 14.228   | 5.000     | 13.667 | +0.390 | -0.420   | 3.000   | 29.000  | 0.77257 | 500  |  |
|         | 14.292   | 5.261     | 13.583 | +0.480 | -0.372   | 2.000   | 29.000  | 0.79499 | 1000 |  |
|         | 14.273   | 5.314     | 13.619 | +0.486 | -0.248   | 1.000   | 30.000  | 0.79938 | 2000 |  |
| WK      | 22.280   | 5.795     | 22.071 | -0.021 | -0.540   | 10.000  | 34.000  | 0.83030 | 100  |  |
|         | 22.680   | 6.227     | 22.621 | -0.099 | -0.698   | 7.000   | 35.000  | 0.85784 | 500  |  |
|         | 22.953   | 6.323     | 23.287 | -0.192 | -0.636   | 5.000   | 35.000  | 0.86320 | 1000 |  |
|         | 23.279   | 6.215     | 23.408 | -0.199 | -0.546   | 4.000   | 35.000  | 0.86115 | 2000 |  |
| PC      | 10.530   | 3.060     | 10.967 | -0.422 | -0.734   | 3.000   | 15.000  | 0.75696 | 100  |  |
|         | 10.738   | 2.649     | 11.059 | -0.694 | +0.217   | 2.000   | 15.000  | 0.68693 | 500  |  |
|         | 10.651   | 2.570     | 10.984 | -0.598 | -0.008   | 1.000   | 15.000  | 0.66160 | 1000 |  |
|         | 10.613   | 2.607     | 10.969 | -0.606 | -0.034   | 2.000   | 15.000  | 0.66748 | 2000 |  |
| AS      | 11.170   | 4.015     | 10.773 | +0.728 | +0.473   | 3.000   | 23.000  | 0.68457 | 100  |  |
|         | 10.610   | 4.090     | 10.198 | +0.634 | +0.280   | 1.000   | 25.000  | 0.70328 | 500  |  |
|         | 10.585   | 4.100     | 9.911  | +0.786 | +0.411   | 2.000   | 24.000  | 0.70333 | 1000 |  |
|         | 10.745   | 4.067     | 10.235 | +0.718 | +0.431   | 0.000   | 25.000  | 0.69695 | 2000 |  |
| MK      | 11.250   | 4.298     | 11.000 | +0.502 | +0.378   | 1.000   | 23.000  | 0.73551 | 100  |  |
|         | 11.820   | 4.566     | 11.104 | +0.514 | -0.330   | 2.000   | 25.000  | 0.77574 | 500  |  |
|         | 12.232   | 4.595     | 11.443 | +0.479 | -0.292   | 0.000   | 25.000  | 0.77576 | 1000 |  |
|         | 12.059   | 4.586     | 11.388 | +0.503 | -0.332   | 2.000   | 25.000  | 0.77420 | 2000 |  |
| MC      | 12.620   | 3.824     | 12.500 | +0.168 | -0.597   | 4.000   | 21.000  | 0.64358 | 100  |  |
|         | 13.030   | 3.763     | 12.765 | +0.188 | -0.381   | 4.000   | 23.000  | 0.64010 | 500  |  |
|         | 12.809   | 3.875     | 12.639 | +0.231 | -0.035   | 0.000   | 25.000  | 0.65949 | 1000 |  |
|         | 12.843   | 3.849     | 12.690 | +0.098 | -0.211   | 0.000   | 25.000  | 0.65363 | 2000 |  |
| EI      | 9.530    | 3.844     | 8.900  | +0.642 | -0.170   | 3.000   | 20.000  | 0.73805 | 100  |  |
|         | 9.540    | 3.402     | 9.300  | +0.546 | +0.227   | 1.000   | 20.000  | 0.65608 | 500  |  |
|         | 9.479    | 3.375     | 9.167  | +0.489 | +0.116   | 1.000   | 20.000  | 0.64736 | 1000 |  |
|         | 9.502    | 3.450     | 9.236  | +0.498 | +0.101   | 1.000   | 20.000  | 0.66622 | 2000 |  |

**Table B-29. Descriptive Statistics of Random Samples of Hispanics, Form 15a**

| Subtest | Standard |           |        |        |          |         |         |         |      |  |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|--|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 14.317   | 4.119     | 13.700 | +0.174 | -0.304   | 6.000   | 25.000  | 0.71537 | 60   |  |
|         | 14.329   | 4.168     | 14.063 | +0.094 | -0.198   | 3.000   | 25.000  | 0.73012 | 298  |  |
|         | 14.258   | 4.155     | 13.900 | +0.200 | -0.531   | 5.000   | 25.000  | 0.73099 | 596  |  |
|         | 14.301   | 4.193     | 14.075 | +0.119 | -0.506   | 3.000   | 25.000  | 0.73642 | 1191 |  |
| AR      | 17.600   | 5.195     | 17.333 | -0.305 | -0.359   | 6.000   | 27.000  | 0.80009 | 60   |  |
|         | 15.829   | 5.663     | 15.574 | +0.334 | -0.419   | 4.000   | 30.000  | 0.82656 | 298  |  |
|         | 16.280   | 5.762     | 15.656 | +0.367 | -0.509   | 4.000   | 30.000  | 0.83379 | 596  |  |
|         | 16.303   | 5.647     | 15.719 | +0.331 | -0.466   | 3.000   | 30.000  | 0.82537 | 1191 |  |
| WK      | 24.083   | 6.995     | 24.500 | -0.356 | -0.872   | 8.000   | 35.000  | 0.88638 | 60   |  |
|         | 22.416   | 7.044     | 22.571 | -0.163 | -0.894   | 3.000   | 35.000  | 0.88322 | 298  |  |
|         | 22.646   | 6.900     | 23.071 | -0.271 | -0.747   | 4.000   | 35.000  | 0.87765 | 596  |  |
|         | 22.615   | 6.929     | 23.170 | -0.256 | -0.795   | 3.000   | 35.000  | 0.87867 | 1191 |  |
| PC      | 10.917   | 2.683     | 11.654 | -0.851 | +0.071   | 4.000   | 15.000  | 0.68571 | 60   |  |
|         | 11.295   | 2.877     | 11.816 | -0.912 | +0.405   | 2.000   | 15.000  | 0.74356 | 298  |  |
|         | 11.183   | 2.790     | 11.682 | -0.718 | -0.003   | 2.000   | 15.000  | 0.71612 | 596  |  |
|         | 11.196   | 2.863     | 11.689 | -0.758 | -0.005   | 2.000   | 15.000  | 0.73195 | 1191 |  |
| AS      | 12.750   | 4.939     | 12.167 | +0.261 | -0.671   | 4.000   | 24.000  | 0.79227 | 60   |  |
|         | 12.839   | 4.688     | 12.281 | +0.282 | -0.646   | 4.000   | 24.000  | 0.77536 | 298  |  |
|         | 12.963   | 4.657     | 12.337 | +0.286 | -0.526   | 1.000   | 25.000  | 0.77117 | 596  |  |
|         | 12.834   | 4.690     | 12.179 | +0.298 | -0.636   | 1.000   | 25.000  | 0.77471 | 1191 |  |
| MK      | 13.967   | 4.971     | 13.100 | +0.433 | -0.594   | 5.000   | 25.000  | 0.81032 | 60   |  |
|         | 12.883   | 5.073     | 12.180 | +0.435 | -0.510   | 2.000   | 25.000  | 0.81295 | 298  |  |
|         | 12.955   | 5.101     | 12.291 | +0.456 | -0.427   | 0.000   | 25.000  | 0.81651 | 596  |  |
|         | 13.004   | 5.158     | 12.332 | +0.390 | -0.547   | 0.000   | 25.000  | 0.82184 | 1191 |  |
| MC      | 13.350   | 4.325     | 13.900 | -0.248 | +0.114   | 2.000   | 23.000  | 0.72553 | 60   |  |
|         | 13.869   | 4.362     | 13.625 | +0.000 | -0.453   | 2.000   | 25.000  | 0.73494 | 298  |  |
|         | 14.154   | 4.159     | 14.220 | -0.093 | -0.140   | 0.000   | 25.000  | 0.71003 | 596  |  |
|         | 14.101   | 4.258     | 14.083 | -0.023 | -0.310   | 0.000   | 25.000  | 0.72245 | 1191 |  |
| EI      | 10.133   | 3.789     | 9.929  | +0.443 | -0.287   | 3.000   | 20.000  | 0.72924 | 60   |  |
|         | 10.584   | 3.323     | 10.438 | +0.255 | -0.018   | 0.000   | 20.000  | 0.64643 | 298  |  |
|         | 10.408   | 3.397     | 10.180 | +0.312 | -0.335   | 3.000   | 20.000  | 0.66335 | 596  |  |
|         | 10.458   | 3.426     | 10.230 | +0.350 | -0.206   | 0.000   | 20.000  | 0.66934 | 1191 |  |

**Table B-30. Descriptive Statistics of Random Samples of Hispanics, Form 15b**

| Subtest | Standard |           |        |        |          |         |         |         |      |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |
| GS      | 13.842   | 4.862     | 13.750 | +0.207 | -0.712   | 5.000   | 23.000  | 0.80385 | 57   |
|         | 14.609   | 4.512     | 14.224 | +0.202 | -0.560   | 4.000   | 25.000  | 0.77036 | 284  |
|         | 14.406   | 4.387     | 14.090 | +0.119 | -0.512   | 3.000   | 25.000  | 0.75991 | 567  |
|         | 14.318   | 4.442     | 13.980 | +0.158 | -0.522   | 3.000   | 25.000  | 0.76670 | 1134 |
| AR      | 15.386   | 5.936     | 14.750 | +0.112 | -0.674   | 3.000   | 29.000  | 0.84204 | 57   |
|         | 15.482   | 5.573     | 14.976 | +0.410 | -0.467   | 5.000   | 30.000  | 0.82725 | 284  |
|         | 16.423   | 5.848     | 15.606 | +0.328 | -0.694   | 3.000   | 30.000  | 0.84574 | 567  |
|         | 16.312   | 5.837     | 15.672 | +0.296 | -0.669   | 3.000   | 30.000  | 0.84411 | 1134 |
| WK      | 24.158   | 6.380     | 24.333 | -0.397 | -0.660   | 8.000   | 35.000  | 0.86488 | 57   |
|         | 23.246   | 6.430     | 23.071 | -0.148 | -0.880   | 7.000   | 35.000  | 0.86108 | 284  |
|         | 23.109   | 6.419     | 23.229 | -0.183 | -0.863   | 6.000   | 35.000  | 0.86129 | 567  |
|         | 23.131   | 6.399     | 23.160 | -0.130 | -0.869   | 6.000   | 35.000  | 0.86057 | 1134 |
| PC      | 11.404   | 2.604     | 11.850 | -0.845 | +0.686   | 3.000   | 15.000  | 0.68947 | 57   |
|         | 10.891   | 3.007     | 11.549 | -0.675 | -0.345   | 2.000   | 15.000  | 0.74960 | 284  |
|         | 10.739   | 3.164     | 11.330 | -0.612 | -0.460   | 2.000   | 15.000  | 0.76943 | 567  |
|         | 10.868   | 3.117     | 11.514 | -0.652 | -0.368   | 1.000   | 15.000  | 0.76716 | 1134 |
| AS      | 11.667   | 4.576     | 11.400 | +0.528 | +0.435   | 2.000   | 25.000  | 0.75676 | 57   |
|         | 12.542   | 4.508     | 12.300 | +0.103 | -0.664   | 2.000   | 24.000  | 0.75102 | 284  |
|         | 12.621   | 4.609     | 12.200 | +0.287 | -0.660   | 2.000   | 25.000  | 0.76253 | 567  |
|         | 12.541   | 4.523     | 12.204 | +0.280 | -0.563   | 2.000   | 25.000  | 0.75307 | 1134 |
| MK      | 13.105   | 5.640     | 12.125 | +0.333 | -0.807   | 4.000   | 25.000  | 0.85666 | 57   |
|         | 12.630   | 5.151     | 11.688 | +0.334 | -0.700   | 2.000   | 25.000  | 0.82224 | 284  |
|         | 12.808   | 5.215     | 11.586 | +0.521 | -0.599   | 2.000   | 25.000  | 0.82860 | 567  |
|         | 12.787   | 5.229     | 11.690 | +0.439 | -0.674   | 2.000   | 25.000  | 0.82870 | 1134 |
| MC      | 13.596   | 4.255     | 13.583 | +0.126 | -0.868   | 6.000   | 22.000  | 0.71908 | 57   |
|         | 13.859   | 4.329     | 14.065 | -0.027 | -0.573   | 3.000   | 24.000  | 0.73214 | 284  |
|         | 13.713   | 4.384     | 13.451 | +0.120 | -0.560   | 3.000   | 25.000  | 0.73805 | 567  |
|         | 13.805   | 4.337     | 13.871 | +0.040 | -0.506   | 2.000   | 25.000  | 0.73352 | 1134 |
| EI      | 10.439   | 3.699     | 10.375 | +0.391 | -0.112   | 4.000   | 20.000  | 0.70891 | 57   |
|         | 10.521   | 3.303     | 10.313 | +0.491 | +0.260   | 2.000   | 20.000  | 0.64163 | 284  |
|         | 10.600   | 3.326     | 10.394 | +0.362 | -0.103   | 2.000   | 20.000  | 0.64363 | 567  |
|         | 10.631   | 3.336     | 10.528 | +0.285 | -0.096   | 1.000   | 20.000  | 0.64470 | 1134 |

**Table B-31. Descriptive Statistics of Random Samples of Hispanics, Form 15c**

| Subtest | Standard |           |        |        |          |         |         |         |      |  |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|--|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 14.345   | 4.652     | 15.000 | -0.394 | -0.104   | 2.000   | 24.000  | 0.79350 | 55   |  |
|         | 14.062   | 4.009     | 14.024 | +0.090 | -0.434   | 4.000   | 24.000  | 0.70329 | 274  |  |
|         | 14.049   | 3.967     | 13.917 | +0.072 | -0.457   | 4.000   | 24.000  | 0.69650 | 548  |  |
|         | 13.889   | 4.024     | 13.684 | +0.084 | -0.346   | 2.000   | 24.000  | 0.70618 | 1095 |  |
| AR      | 14.636   | 3.964     | 13.800 | +0.621 | +0.372   | 6.000   | 25.000  | 0.62548 | 55   |  |
|         | 15.314   | 5.086     | 14.603 | +0.679 | +0.200   | 6.000   | 30.000  | 0.78227 | 274  |  |
|         | 15.546   | 5.673     | 14.621 | +0.510 | -0.383   | 4.000   | 30.000  | 0.82787 | 548  |  |
|         | 15.556   | 5.526     | 14.797 | +0.486 | -0.300   | 4.000   | 30.000  | 0.81812 | 1095 |  |
| WK      | 23.164   | 5.534     | 23.286 | -0.363 | -0.515   | 11.000  | 33.000  | 0.81679 | 55   |  |
|         | 24.456   | 5.573     | 24.881 | -0.421 | -0.141   | 9.000   | 35.000  | 0.82930 | 274  |  |
|         | 24.414   | 5.384     | 24.691 | -0.319 | -0.305   | 9.000   | 35.000  | 0.81434 | 548  |  |
|         | 24.305   | 5.485     | 24.694 | -0.367 | -0.266   | 7.000   | 35.000  | 0.81995 | 1095 |  |
| PC      | 10.527   | 2.768     | 10.857 | -0.493 | -0.659   | 4.000   | 15.000  | 0.67279 | 55   |  |
|         | 9.912    | 2.913     | 10.210 | -0.396 | -0.518   | 2.000   | 15.000  | 0.67915 | 274  |  |
|         | 9.863    | 2.959     | 10.183 | -0.411 | -0.556   | 0.000   | 15.000  | 0.69052 | 548  |  |
|         | 10.014   | 2.878     | 10.430 | -0.483 | -0.388   | 0.000   | 15.000  | 0.67540 | 1095 |  |
| AS      | 12.309   | 4.594     | 12.000 | +0.400 | -0.164   | 4.000   | 25.000  | 0.76369 | 55   |  |
|         | 12.737   | 4.534     | 12.350 | +0.212 | -0.649   | 0.000   | 24.000  | 0.75823 | 274  |  |
|         | 12.870   | 4.601     | 12.500 | +0.311 | -0.434   | 0.000   | 25.000  | 0.76596 | 548  |  |
|         | 12.915   | 4.691     | 12.482 | +0.290 | -0.531   | 0.000   | 25.000  | 0.77429 | 1095 |  |
| MK      | 11.564   | 5.021     | 11.000 | +0.613 | -0.441   | 4.000   | 22.000  | 0.81253 | 55   |  |
|         | 12.277   | 5.374     | 11.375 | +0.408 | -0.643   | 0.000   | 25.000  | 0.83814 | 274  |  |
|         | 12.115   | 5.187     | 11.181 | +0.515 | -0.491   | 0.000   | 25.000  | 0.82574 | 548  |  |
|         | 11.980   | 5.191     | 11.173 | +0.469 | -0.447   | 0.000   | 25.000  | 0.82591 | 1095 |  |
| MC      | 13.782   | 5.102     | 12.917 | +0.453 | -0.595   | 5.000   | 25.000  | 0.81731 | 55   |  |
|         | 12.693   | 4.374     | 12.048 | +0.325 | -0.492   | 2.000   | 24.000  | 0.73041 | 274  |  |
|         | 12.849   | 4.465     | 12.480 | +0.169 | -0.389   | 0.000   | 24.000  | 0.74638 | 548  |  |
|         | 12.935   | 4.472     | 12.454 | +0.258 | -0.460   | 0.000   | 25.000  | 0.74710 | 1095 |  |
| EI      | 10.218   | 3.010     | 10.000 | +0.129 | +0.575   | 3.000   | 18.000  | 0.54258 | 55   |  |
|         | 9.872    | 3.554     | 9.733  | +0.170 | -0.335   | 2.000   | 20.000  | 0.69370 | 274  |  |
|         | 10.157   | 3.436     | 10.022 | +0.043 | -0.436   | 0.000   | 20.000  | 0.66853 | 548  |  |
|         | 10.075   | 3.467     | 9.949  | +0.054 | -0.386   | 0.000   | 20.000  | 0.67372 | 1095 |  |

**Table B-32. Descriptive Statistics of Random Samples of Hispanics, Form 16a**

| Subtest | Standard |           |        |        |          |         |         |         |      |  |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|--|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 13.927   | 4.768     | 13.800 | +0.056 | -0.739   | 5.000   | 23.000  | 0.80922 | 55   |  |
|         | 13.964   | 4.290     | 13.932 | +0.124 | -0.428   | 3.000   | 24.000  | 0.75377 | 275  |  |
|         | 14.365   | 4.450     | 14.147 | +0.202 | -0.632   | 5.000   | 25.000  | 0.77471 | 550  |  |
|         | 14.106   | 4.405     | 13.949 | +0.169 | -0.541   | 3.000   | 25.000  | 0.76900 | 1100 |  |
| AR      | 16.927   | 5.731     | 16.750 | +0.171 | -0.611   | 5.000   | 29.000  | 0.83640 | 55   |  |
|         | 16.120   | 5.842     | 15.781 | +0.296 | -0.446   | 3.000   | 30.000  | 0.83838 | 275  |  |
|         | 16.329   | 5.577     | 16.177 | +0.184 | -0.488   | 3.000   | 30.000  | 0.82347 | 550  |  |
|         | 16.487   | 5.516     | 16.325 | +0.131 | -0.558   | 3.000   | 30.000  | 0.81819 | 1100 |  |
| WK      | 23.764   | 5.584     | 23.600 | -0.144 | -0.383   | 12.000  | 35.000  | 0.82063 | 55   |  |
|         | 24.044   | 5.711     | 24.059 | -0.228 | -0.466   | 7.000   | 35.000  | 0.83124 | 275  |  |
|         | 23.309   | 6.014     | 23.643 | -0.255 | -0.552   | 6.000   | 35.000  | 0.84671 | 550  |  |
|         | 23.577   | 6.021     | 24.125 | -0.319 | -0.520   | 6.000   | 35.000  | 0.84841 | 1100 |  |
| PC      | 10.873   | 3.163     | 11.563 | -1.180 | +1.263   | 1.000   | 15.000  | 0.77423 | 55   |  |
|         | 11.047   | 3.149     | 11.839 | -0.818 | -0.064   | 1.000   | 15.000  | 0.77812 | 275  |  |
|         | 10.911   | 3.220     | 11.639 | -0.764 | -0.172   | 1.000   | 15.000  | 0.78650 | 550  |  |
|         | 10.870   | 3.224     | 11.588 | -0.729 | -0.270   | 1.000   | 15.000  | 0.78575 | 1100 |  |
| AS      | 12.527   | 5.718     | 11.143 | +0.604 | -0.627   | 3.000   | 25.000  | 0.85780 | 55   |  |
|         | 12.087   | 5.459     | 11.462 | +0.304 | -0.873   | 1.000   | 25.000  | 0.83973 | 275  |  |
|         | 11.842   | 5.431     | 11.167 | +0.321 | -0.826   | 1.000   | 25.000  | 0.83882 | 550  |  |
|         | 11.705   | 5.338     | 11.027 | +0.344 | -0.816   | 1.000   | 25.000  | 0.83136 | 1100 |  |
| MK      | 13.218   | 5.846     | 12.000 | +0.463 | -0.940   | 5.000   | 25.000  | 0.86350 | 55   |  |
|         | 13.189   | 5.586     | 12.344 | +0.341 | -0.837   | 2.000   | 25.000  | 0.84947 | 275  |  |
|         | 12.715   | 5.429     | 11.743 | +0.412 | -0.670   | 1.000   | 25.000  | 0.83844 | 550  |  |
|         | 12.665   | 5.450     | 11.636 | +0.422 | -0.738   | 1.000   | 25.000  | 0.83967 | 1100 |  |
| MC      | 14.673   | 4.497     | 14.250 | +0.004 | -0.928   | 5.000   | 22.000  | 0.74664 | 55   |  |
|         | 14.207   | 4.368     | 14.250 | -0.117 | -0.624   | 3.000   | 25.000  | 0.73176 | 275  |  |
|         | 14.089   | 4.294     | 14.000 | +0.008 | -0.603   | 3.000   | 25.000  | 0.71916 | 550  |  |
|         | 13.987   | 4.313     | 13.886 | +0.000 | -0.554   | 2.000   | 25.000  | 0.72142 | 1100 |  |
| EI      | 10.600   | 3.670     | 10.563 | +0.299 | -0.556   | 4.000   | 19.000  | 0.70265 | 55   |  |
|         | 10.913   | 3.637     | 10.661 | +0.220 | -0.718   | 3.000   | 19.000  | 0.69821 | 275  |  |
|         | 10.882   | 3.578     | 10.559 | +0.280 | -0.546   | 3.000   | 20.000  | 0.68728 | 550  |  |
|         | 10.862   | 3.707     | 10.631 | +0.198 | -0.554   | 1.000   | 20.000  | 0.71069 | 1100 |  |

**Table B-33. Descriptive Statistics of Random Samples of Hispanics, Form 16b**

| Subtest | Standard |           |        |        |          |         |         |         |      |  |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|--|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 13.554   | 4.289     | 12.875 | +0.448 | -0.376   | 5.000   | 23.000  | 0.75487 | 56   |  |
|         | 14.614   | 4.640     | 14.286 | +0.089 | -0.653   | 3.000   | 25.000  | 0.79735 | 277  |  |
|         | 14.215   | 4.465     | 14.044 | +0.116 | -0.582   | 3.000   | 25.000  | 0.77758 | 553  |  |
|         | 14.126   | 4.451     | 14.909 | +0.123 | -0.564   | 2.000   | 25.000  | 0.77552 | 1106 |  |
| AR      | 15.857   | 6.411     | 16.000 | +0.319 | -0.877   | 6.000   | 30.000  | 0.87666 | 56   |  |
|         | 15.827   | 5.867     | 14.750 | +0.441 | -0.556   | 4.000   | 30.000  | 0.84173 | 277  |  |
|         | 16.065   | 5.962     | 15.280 | +0.425 | -0.687   | 5.000   | 30.000  | 0.84614 | 553  |  |
|         | 15.981   | 5.813     | 15.265 | +0.384 | -0.630   | 4.000   | 30.000  | 0.83749 | 1106 |  |
| WK      | 24.143   | 5.962     | 24.700 | -0.364 | -0.368   | 12.000  | 35.000  | 0.85737 | 56   |  |
|         | 23.827   | 6.392     | 23.906 | -0.336 | -0.525   | 7.000   | 35.000  | 0.87088 | 277  |  |
|         | 23.427   | 6.282     | 23.654 | -0.373 | -0.326   | 5.000   | 35.000  | 0.86502 | 553  |  |
|         | 23.327   | 6.252     | 23.610 | -0.349 | -0.311   | 5.000   | 35.000  | 0.86318 | 1106 |  |
| PC      | 10.875   | 3.045     | 11.600 | -0.914 | +0.491   | 2.000   | 15.000  | 0.74899 | 56   |  |
|         | 10.993   | 2.737     | 11.298 | -0.561 | -0.108   | 1.000   | 15.000  | 0.68509 | 277  |  |
|         | 10.850   | 2.862     | 11.291 | -0.659 | -0.001   | 2.000   | 15.000  | 0.70919 | 553  |  |
|         | 10.809   | 2.880     | 11.248 | -0.608 | -0.229   | 1.000   | 15.000  | 0.71133 | 1106 |  |
| AS      | 12.214   | 4.931     | 12.000 | +0.235 | +0.024   | 1.000   | 25.000  | 0.80459 | 56   |  |
|         | 12.072   | 5.219     | 11.386 | +0.407 | -0.583   | 2.000   | 25.000  | 0.82069 | 277  |  |
|         | 11.528   | 5.114     | 10.857 | -0.452 | -0.411   | 2.000   | 25.000  | 0.81477 | 553  |  |
|         | 11.850   | 5.200     | 11.205 | +0.383 | -0.633   | 1.000   | 25.000  | 0.82097 | 1106 |  |
| MK      | 13.893   | 5.239     | 13.500 | +0.186 | -0.937   | 4.000   | 24.000  | 0.82814 | 56   |  |
|         | 12.805   | 5.469     | 11.841 | +0.488 | -0.623   | 3.000   | 25.000  | 0.84214 | 277  |  |
|         | 12.315   | 5.121     | 11.443 | +0.531 | -0.337   | 1.000   | 25.000  | 0.81495 | 553  |  |
|         | 12.665   | 5.315     | 11.838 | +0.420 | -0.573   | 0.000   | 25.000  | 0.83086 | 1106 |  |
| MC      | 14.643   | 4.653     | 15.000 | +0.004 | -0.755   | 5.000   | 24.000  | 0.76675 | 56   |  |
|         | 13.877   | 4.413     | 14.094 | -0.114 | -0.588   | 3.000   | 24.000  | 0.73500 | 277  |  |
|         | 14.107   | 4.421     | 14.462 | -0.164 | -0.359   | 0.000   | 25.000  | 0.73850 | 553  |  |
|         | 14.216   | 4.430     | 14.293 | -0.060 | -0.547   | 0.000   | 25.000  | 0.73973 | 1106 |  |
| EI      | 10.982   | 3.797     | 10.643 | +0.576 | -0.188   | 5.000   | 20.000  | 0.73023 | 56   |  |
|         | 10.383   | 3.955     | 10.333 | +0.106 | -0.459   | 0.000   | 20.000  | 0.74562 | 277  |  |
|         | 10.620   | 3.870     | 10.412 | +0.193 | -0.628   | 0.000   | 20.000  | 0.73749 | 553  |  |
|         | 10.723   | 3.796     | 10.686 | +0.114 | -0.578   | 0.000   | 20.000  | 0.72585 | 1106 |  |

**Table B-35. Descriptive Statistics of Random Samples of Hispanics, Form 17a**

| Standard |        |           |        |        |          |         |         |         |      |  |
|----------|--------|-----------|--------|--------|----------|---------|---------|---------|------|--|
| Subtest  | Mean   | Deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS       | 14.036 | 4.675     | 14.100 | -0.026 | -0.418   | 3.000   | 24.000  | 0.78845 | 56   |  |
|          | 13.789 | 4.538     | 13.296 | +0.181 | -0.760   | 3.000   | 24.000  | 0.76322 | 279  |  |
|          | 13.493 | 4.497     | 13.010 | +0.279 | -0.471   | 3.000   | 25.000  | 0.75713 | 558  |  |
|          | 13.726 | 4.416     | 13.452 | +0.157 | -0.497   | 1.000   | 25.000  | 0.75098 | 1115 |  |
| AR       | 15.107 | 5.399     | 14.214 | +0.467 | -0.421   | 5.000   | 28.000  | 0.80507 | 56   |  |
|          | 16.176 | 5.913     | 15.792 | +0.216 | -0.580   | 4.000   | 30.000  | 0.84378 | 279  |  |
|          | 15.704 | 5.824     | 15.109 | +0.389 | -0.327   | 4.000   | 30.000  | 0.83517 | 558  |  |
|          | 15.881 | 5.832     | 15.388 | +0.310 | -0.497   | 4.000   | 30.000  | 0.83679 | 1115 |  |
| WK       | 22.518 | 7.086     | 22.000 | -0.060 | -0.557   | 5.000   | 35.000  | 0.88010 | 56   |  |
|          | 23.412 | 6.513     | 23.361 | -0.183 | -0.675   | 7.000   | 35.000  | 0.86552 | 279  |  |
|          | 23.360 | 6.737     | 23.500 | -0.189 | -0.674   | 5.000   | 35.000  | 0.87614 | 558  |  |
|          | 23.357 | 6.580     | 23.478 | -0.231 | -0.540   | 5.000   | 35.000  | 0.86946 | 1115 |  |
| PC       | 10.196 | 3.095     | 10.389 | -0.504 | -0.328   | 3.000   | 15.000  | 0.74026 | 56   |  |
|          | 10.896 | 3.040     | 11.563 | -0.709 | -0.247   | 2.000   | 15.000  | 0.75263 | 279  |  |
|          | 10.703 | 3.098     | 11.173 | -0.541 | -0.425   | 0.000   | 15.000  | 0.75299 | 558  |  |
|          | 10.813 | 3.096     | 11.340 | -0.636 | -0.325   | 0.000   | 15.000  | 0.75736 | 1115 |  |
| AS       | 13.375 | 5.175     | 13.071 | +0.170 | -0.593   | 3.000   | 24.000  | 0.81722 | 56   |  |
|          | 12.918 | 4.933     | 12.417 | +0.527 | -0.374   | 3.000   | 25.000  | 0.79819 | 279  |  |
|          | 13.108 | 4.960     | 12.577 | +0.334 | -0.562   | 2.000   | 25.000  | 0.80101 | 558  |  |
|          | 12.842 | 4.730     | 12.413 | +0.357 | -0.437   | 2.000   | 25.000  | 0.77814 | 1115 |  |
| MK       | 12.500 | 5.152     | 11.214 | +0.665 | -0.506   | 5.000   | 24.000  | 0.82928 | 56   |  |
|          | 12.638 | 4.871     | 12.040 | +0.482 | -0.394   | 3.000   | 25.000  | 0.79890 | 279  |  |
|          | 13.267 | 4.956     | 12.745 | +0.420 | -0.545   | 2.000   | 25.000  | 0.80916 | 558  |  |
|          | 12.977 | 4.931     | 12.415 | +0.410 | -0.471   | 1.000   | 25.000  | 0.80707 | 1115 |  |
| MC       | 14.839 | 4.310     | 13.900 | +0.452 | -0.321   | 7.000   | 25.000  | 0.74153 | 56   |  |
|          | 13.953 | 4.459     | 13.857 | +0.046 | -0.537   | 4.000   | 25.000  | 0.75293 | 279  |  |
|          | 14.151 | 4.241     | 14.065 | +0.061 | -0.431   | 4.000   | 25.000  | 0.72544 | 558  |  |
|          | 14.229 | 4.213     | 14.197 | +0.021 | -0.445   | 4.000   | 25.000  | 0.72263 | 1115 |  |
| EI       | 11.268 | 3.392     | 10.750 | +0.399 | -0.715   | 6.000   | 19.000  | 0.67131 | 56   |  |
|          | 10.606 | 3.567     | 10.484 | +0.158 | -0.376   | 1.000   | 19.000  | 0.69753 | 279  |  |
|          | 10.785 | 3.700     | 10.611 | +0.193 | -0.296   | 0.000   | 20.000  | 0.71831 | 558  |  |
|          | 10.708 | 3.677     | 10.504 | +0.212 | -0.327   | 0.000   | 20.000  | 0.71608 | 1115 |  |

**Table B-35. Descriptive Statistics of Random Samples of Hispanics, Form 17b**

| Subtest | Standard |           |        |        |          |         |         |         |      |  |
|---------|----------|-----------|--------|--------|----------|---------|---------|---------|------|--|
|         | Mean     | deviation | Median | Skew   | Kurtosis | Minimum | Maximum | KR-20   | N    |  |
| GS      | 13.784   | 4.206     | 12.750 | +0.761 | -0.432   | 8.000   | 24.000  | 0.72549 | 51   |  |
|         | 13.779   | 4.393     | 13.370 | +0.208 | -0.539   | 4.000   | 25.000  | 0.74930 | 253  |  |
|         | 13.767   | 4.454     | 13.500 | +0.035 | -0.563   | 2.000   | 24.000  | 0.75781 | 506  |  |
|         | 13.946   | 4.362     | 13.651 | +0.154 | -0.427   | 2.000   | 25.000  | 0.74515 | 1012 |  |
| AR      | 14.882   | 6.141     | 14.750 | +0.317 | -0.665   | 4.000   | 29.000  | 0.85392 | 51   |  |
|         | 15.945   | 5.966     | 15.156 | +0.314 | -0.841   | 5.000   | 30.000  | 0.84578 | 253  |  |
|         | 16.032   | 5.981     | 15.500 | +0.259 | -0.702   | 4.000   | 30.000  | 0.84827 | 506  |  |
|         | 16.019   | 5.879     | 15.449 | +0.251 | -0.723   | 4.000   | 30.000  | 0.84167 | 1012 |  |
| WK      | 23.490   | 6.682     | 24.000 | -0.123 | -1.098   | 11.000  | 35.000  | 0.88204 | 51   |  |
|         | 23.407   | 6.518     | 23.313 | -0.107 | -0.981   | 8.000   | 35.000  | 0.86999 | 253  |  |
|         | 23.573   | 6.498     | 23.313 | -0.102 | -0.950   | 8.000   | 35.000  | 0.87093 | 506  |  |
|         | 23.253   | 6.420     | 23.025 | -0.049 | -0.890   | 8.000   | 35.000  | 0.86562 | 1012 |  |
| PC      | 10.431   | 2.837     | 10.625 | -0.557 | -0.029   | 3.000   | 15.000  | 0.68948 | 51   |  |
|         | 10.791   | 2.988     | 11.648 | -0.933 | +0.417   | 0.000   | 15.000  | 0.75222 | 253  |  |
|         | 10.980   | 2.876     | 11.692 | -0.787 | -0.100   | 2.000   | 15.000  | 0.73814 | 506  |  |
|         | 10.885   | 2.842     | 11.513 | -0.813 | +0.218   | 0.000   | 15.000  | 0.72736 | 1012 |  |
| AS      | 13.529   | 4.549     | 13.600 | +0.100 | -0.197   | 4.000   | 25.000  | 0.76105 | 51   |  |
|         | 12.747   | 4.905     | 12.339 | +0.255 | -0.639   | 4.000   | 23.000  | 0.79546 | 253  |  |
|         | 13.168   | 4.938     | 12.729 | +0.299 | -0.584   | 4.000   | 25.000  | 0.79988 | 506  |  |
|         | 12.827   | 4.886     | 12.227 | +0.370 | -0.536   | 2.000   | 25.000  | 0.79304 | 1012 |  |
| MK      | 12.784   | 4.892     | 12.667 | +0.422 | -0.658   | 5.000   | 24.000  | 0.79970 | 51   |  |
|         | 12.822   | 5.187     | 12.194 | +0.512 | -0.404   | 3.000   | 25.000  | 0.82628 | 253  |  |
|         | 13.109   | 5.278     | 12.321 | +0.392 | -0.641   | 0.000   | 25.000  | 0.83334 | 506  |  |
|         | 13.083   | 5.159     | 12.487 | +0.329 | -0.601   | 0.000   | 25.000  | 0.82330 | 1012 |  |
| MC      | 13.961   | 4.015     | 14.000 | +0.095 | -0.395   | 6.000   | 24.000  | 0.69157 | 51   |  |
|         | 14.482   | 4.351     | 14.571 | -0.320 | +0.408   | 0.000   | 24.000  | 0.75045 | 253  |  |
|         | 14.170   | 4.215     | 14.174 | +0.046 | -0.388   | 1.000   | 24.000  | 0.72310 | 506  |  |
|         | 14.196   | 4.229     | 14.216 | -0.082 | -0.233   | 0.000   | 25.000  | 0.72650 | 1012 |  |
| EI      | 9.863    | 3.644     | 8.750  | +0.848 | +0.023   | 4.000   | 19.000  | 0.70439 | 51   |  |
|         | 10.834   | 3.990     | 10.360 | +0.246 | -0.679   | 1.000   | 20.000  | 0.76625 | 253  |  |
|         | 10.591   | 3.783     | 10.080 | +0.409 | -0.540   | 0.000   | 20.000  | 0.73447 | 506  |  |
|         | 10.575   | 3.815     | 10.098 | +0.360 | -0.496   | 0.000   | 20.000  | 0.73969 | 1012 |  |

**APPENDIX C: MEANS AND STANDARD DEVIATIONS OF FIVE DIF INDICES BY ASVAB FORM, SUBTEST, AND SAMPLE SIZE**

**Table C-1. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 15B, Subgroup White vs White**

| Subtest/<br>Index | Random Sample Size |          |        |          |       |         |                  |         |
|-------------------|--------------------|----------|--------|----------|-------|---------|------------------|---------|
|                   | N=2000             | N=1000   | N=500  | N=100    |       |         |                  |         |
| <b>GS</b>         |                    |          |        |          |       |         |                  |         |
| FCHI5             | 3.370              | (2.060)  | 4.123  | (2.339)  | 5.932 | (3.224) | 5.175            | (3.215) |
| MHCHI             | .362               | (.507)   | .558   | (.562)   | .488  | (.811)  | .700             | (.303)  |
| MHOODS            | 1.000              | (.053)   | 1.024  | (.119)   | 1.018 | (.155)  | 1.082            | (.488)  |
| LCHI              | 19.181             | (21.953) | 10.409 | (12.346) |       |         |                  |         |
| MSOS              | 17.818             | (38.360) | 17.848 | (36.583) |       |         |                  |         |
| <b>AR</b>         |                    |          |        |          |       |         |                  |         |
| FCHI5             | 3.717              | (2.767)  | 4.502  | (2.909)  | 4.361 | (2.710) | 6.25             | (3.626) |
| MHCHI             | .508               | (.691)   | .860   | (1.505)  | .910  | (1.074) | .83 <sup>a</sup> | (1.254) |
| MHOODS            | 1.009              | (.080)   | 1.016  | (.145)   | 1.029 | (.196)  | 1.105            | (.552)  |
| LCHI              | 9.958              | (13.705) | 7.582  | (7.859)  |       |         |                  |         |
| MSOS              | 24.886             | (36.155) | 31.971 | (35.419) |       |         |                  |         |
| <b>WK</b>         |                    |          |        |          |       |         |                  |         |
| FCHI5             | 3.671              | (2.605)  | 4.517  | (2.577)  | 4.073 | (2.014) | 4.772            | (3.315) |
| MHCHI             | .643               | (1.085)  | .800   | (1.061)  | .583  | (.798)  | .689             | (1.324) |
| MHOODS            | 1.008              | (.142)   | 1.033  | (.207)   | .998  | (.238)  | 1.084            | (.687)  |
| LCHI              | 30.067             | (34.770) | 21.662 | (17.730) |       |         |                  |         |
| MSOS              | 15.658             | (16.977) | 21.954 | (24.462) |       |         |                  |         |
| <b>PC</b>         |                    |          |        |          |       |         |                  |         |
| FCHI5             | 2.643              | (1.406)  | 5.369  | (3.373)  | 3.950 | (1.971) | *                | (*)     |
| MHCHI             | .331               | (.362)   | 1.285  | (1.632)  | .449  | (.486)  | 1.087            | (1.923) |
| MHOODS            | 1.023              | (.072)   | 1.013  | (.171)   | 1.009 | (.200)  | 1.094            | (.883)  |
| LCHI              | **                 | (**)     | 14.438 | (10.310) |       |         |                  |         |
| MSOS              | **                 | (**)     | 67.989 | (70.594) |       |         |                  |         |
| <b>AS</b>         |                    |          |        |          |       |         |                  |         |
| FCHI5             | 4.218              | (2.674)  | 4.301  | (3.423)  | 4.946 | (3.260) | 6.110            | (3.735) |
| MHCHI             | 1.007              | (1.387)  | .982   | (1.772)  | .872  | (1.380) | .928             | (1.329) |
| MHOODS            | .992               | (.093)   | 1.008  | (.118)   | 1.008 | (.168)  | 1.111            | (.528)  |
| LCHI              | 8.056              | (10.100) | 5.794  | (6.323)  |       |         |                  |         |
| MSOS              | 6.640              | (4.837)  | 12.168 | (12.372) |       |         |                  |         |
| <b>MK</b>         |                    |          |        |          |       |         |                  |         |
| FCHI5             | 4.274              | (2.767)  | 5.199  | (2.835)  | 4.525 | (2.553) | 5.021            | (3.011) |
| MHCHI             | .961               | (1.386)  | .898   | (1.561)  | .843  | (1.102) | .497             | (.854)  |
| MHOODS            | 1.000              | (.079)   | 1.010  | (.111)   | 1.018 | (.167)  | 1.013            | (.364)  |
| LCHI              | 26.768             | (47.294) | 15.270 | (25.699) |       |         |                  |         |
| MSOS              | 38.663             | (47.980) | 45.724 | (65.349) |       |         |                  |         |
| <b>MC</b>         |                    |          |        |          |       |         |                  |         |
| FCHI5             | 3.200              | (2.216)  | 4.886  | (2.621)  | 4.777 | (3.848) | 5.877            | (3.773) |
| MHCHI             | .625               | (.945)   | 1.073  | (1.430)  | 1.147 | (1.916) | .396             | (.549)  |
| MHOODS            | 1.001              | (.066)   | 1.023  | (.146)   | 1.023 | (.184)  | 1.059            | (.351)  |
| LCHI              | 19.093             | (22.574) | 16.626 | (20.731) |       |         |                  |         |
| MSOS              | 20.485             | (35.886) | 25.082 | (33.348) |       |         |                  |         |
| <b>EI</b>         |                    |          |        |          |       |         |                  |         |
| FCHI5             | 4.929              | (3.789)  | 4.933  | (2.754)  | 4.426 | (3.118) | 4.424            | (2.659) |
| MHCHI             | 1.249              | (1.278)  | .683   | (1.231)  | 1.044 | (1.868) | 1.008            | (1.519) |
| MHOODS            | 1.015              | (.101)   | 1.002  | (.102)   | 1.004 | (.183)  | 1.147            | (.556)  |
| LCHI              | 26.378             | (23.606) | 10.751 | (7.867)  |       |         |                  |         |
| MSOS              | 15.608             | (20.350) | 29.709 | (33.554) |       |         |                  |         |

**Note.** LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

\*Values were not computed since Full Chi-Square was not able to establish five score intervals.

\*\*Values were not computed since parameter estimates from LOGIST5 did not converge.

**Table C-2. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 15B, Subgroup White vs Black**

| Subtest/<br>Index | <u>Random Sample Size</u> |          |        |          |        |          |        |         |
|-------------------|---------------------------|----------|--------|----------|--------|----------|--------|---------|
|                   | N=2000                    | N=1000   |        | N=500    | N=100  |          |        |         |
| <b>GS</b>         |                           |          |        |          |        |          |        |         |
| FCH15             | 25.468                    | (42.678) | 13.355 | (22.919) | 9.022  | (10.084) | 5.448  | (4.441) |
| MHCHI             | 15.893                    | (32.730) | 7.341  | (16.545) | 3.514  | (7.839)  | 1.136  | (2.359) |
| MHOODS            | 1.054                     | (.448)   | 1.075  | (.461)   | 1.053  | (.431)   | 1.076  | (.684)  |
| LCHI              | 28.198                    | (44.415) | 13.709 | (22.313) |        |          |        |         |
| MSOS              | 44.055                    | (74.888) | 49.223 | (67.459) |        |          |        |         |
| <b>AR</b>         |                           |          |        |          |        |          |        |         |
| FCH15             | 21.208                    | (33.032) | 14.344 | (15.735) | 9.579  | (9.304)  | *      | (*)     |
| MHCHI             | 13.178                    | (23.070) | 7.388  | (11.550) | 3.783  | (6.144)  | .690   | (.953)  |
| MHOODS            | 1.049                     | (.369)   | 1.053  | (.358)   | 1.043  | (.411)   | 1.067  | (.455)  |
| LCHI              | 18.774                    | (22.115) | 11.857 | (12.434) |        |          |        |         |
| MSOS              | 39.710                    | (67.528) | 49.597 | (66.861) |        |          |        |         |
| <b>WK</b>         |                           |          |        |          |        |          |        |         |
| FCH15             | 20.904                    | (18.668) | 13.021 | (8.664)  | 9.299  | (6.389)  | 6.310  | (3.319) |
| MHCHI             | 11.775                    | (16.401) | 5.244  | (7.204)  | 2.895  | (5.829)  | .854   | (1.058) |
| MHOODS            | 1.103                     | (.403)   | 1.090  | (.387)   | 1.072  | (.383)   | 1.139  | (.573)  |
| LCHI              | 42.829                    | (36.678) | 25.496 | (21.187) |        |          |        |         |
| MSOS              | 33.509                    | (41.291) | 36.220 | (40.632) |        |          |        |         |
| <b>PC</b>         |                           |          |        |          |        |          |        |         |
| FCH15             | 15.441                    | (12.640) | 11.377 | (6.552)  | 11.557 | (8.320)  | *      | (*)     |
| MHCHI             | 9.083                     | (10.774) | 5.237  | (5.570)  | 5.416  | (7.761)  | .610   | (.964)  |
| MHOODS            | 1.092                     | (.324)   | 1.140  | (.432)   | 1.147  | (.601)   | 1.210  | (.715)  |
| LCHI              | **                        | (**)     | 9.689  | (8.510)  |        |          |        |         |
| MSOS              | **                        | (**)     | 52.649 | (49.740) |        |          |        |         |
| <b>AS</b>         |                           |          |        |          |        |          |        |         |
| FCH15             | 17.839                    | (17.625) | 11.460 | (9.926)  | 8.507  | (6.042)  | 11.187 | (.000)  |
| MHCHI             | 7.131                     | (9.254)  | 3.684  | (3.973)  | 1.552  | (2.183)  | .817   | (1.289) |
| MHOODS            | 1.041                     | (.277)   | 1.050  | (.287)   | 1.036  | (.266)   | 1.161  | (.677)  |
| LCHI              | 10.011                    | (9.912)  | 8.024  | (9.211)  |        |          |        |         |
| MSOS              | 37.188                    | (63.587) | 43.498 | (58.407) |        |          |        |         |
| <b>MK</b>         |                           |          |        |          |        |          |        |         |
| FCH15             | 21.313                    | (20.525) | 14.139 | (17.225) | 8.309  | (8.787)  | 8.295  | (3.169) |
| MHCHI             | 14.639                    | (20.651) | 7.624  | (14.585) | 3.637  | (7.529)  | .955   | (1.574) |
| MHOODS            | 1.038                     | (.330)   | 1.045  | (.361)   | 1.054  | (.398)   | 1.063  | (.412)  |
| LCHI              | 20.569                    | (21.133) | 12.332 | (14.255) |        |          |        |         |
| MSOS              | 42.198                    | (41.999) | 48.402 | (62.841) |        |          |        |         |
| <b>MC</b>         |                           |          |        |          |        |          |        |         |
| FCH15             | 16.968                    | (19.872) | 9.224  | (8.063)  | 7.789  | (6.435)  | 2.388  | (1.099) |
| MHCHI             | 8.894                     | (12.397) | 4.142  | (5.593)  | 3.231  | (4.106)  | .897   | (1.831) |
| MHOODS            | 1.037                     | (.289)   | 1.037  | (.265)   | 1.054  | (.354)   | 1.074  | (.431)  |
| LCHI              | 11.998                    | (14.053) | 7.242  | (7.986)  |        |          |        |         |
| MSOS              | 33.679                    | (31.699) | 34.481 | (29.290) |        |          |        |         |
| <b>EI</b>         |                           |          |        |          |        |          |        |         |
| FCH15             | 16.747                    | (10.802) | 7.399  | (5.791)  | 8.090  | (5.077)  | *      | (*)     |
| MHCHI             | 7.879                     | (8.201)  | 2.572  | (3.096)  | 2.596  | (2.592)  | .415   | (.418)  |
| MHOODS            | 1.024                     | (.242)   | 1.010  | (.193)   | 1.033  | (.297)   | 1.061  | (.352)  |
| LCHI              | 17.765                    | (14.421) | 6.247  | (6.313)  |        |          |        |         |
| MSOS              | 36.867                    | (31.757) | 27.243 | (24.767) |        |          |        |         |

Note. LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

\*Values were not computed since Full Chi-Square was not able to establish five score intervals.

\*\*Values were not computed since parameter estimates from LOGIST5 did not converge.

**Table C-3. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 15B, Subgroup White vs Hispanic**

| Subtest/<br>Index | <u>Random Sample Size</u> |           |         |           |        |         |       |         |
|-------------------|---------------------------|-----------|---------|-----------|--------|---------|-------|---------|
|                   | N=2000                    | N=1000    |         | N=500     | N=100  |         |       |         |
| <b>GS</b>         |                           |           |         |           |        |         |       |         |
| FCH15             | 22.064                    | (29.065)  | 13.162  | (17.625)  | 10.972 | (8.646) | *     | (*)     |
| MHC1I             | 14.051                    | (21.879)  | 8.252   | (13.244)  | 4.894  | (6.128) | 1.644 | (3.116) |
| MHOODS            | 1.098                     | (.516)    | 1.139   | (.562)    | 1.154  | (.618)  | 1.191 | (.750)  |
| LCHI              | 17.534                    | (23.906)  | 10.792  | (15.537)  |        |         |       |         |
| MSOS              | 48.687                    | (65.012)  | 57.291  | (81.768)  |        |         |       |         |
| <b>AR</b>         |                           |           |         |           |        |         |       |         |
| FCH15             | 12.863                    | (18.032)  | 10.070  | (8.738)   | 6.605  | (5.865) | 7.849 | (.000)  |
| MHC1I             | 7.532                     | (14.200)  | 4.260   | (6.891)   | 1.998  | (3.388) | .724  | (.965)  |
| MHOODS            | 1.036                     | (.336)    | 1.037   | (.353)    | 1.036  | (.345)  | 1.122 | (.547)  |
| LCHI              | 11.748                    | (17.590)  | 6.976   | (7.883)   |        |         |       |         |
| MSOS              | 30.628                    | (53.536)  | 37.542  | (52.484)  |        |         |       |         |
| <b>WK</b>         |                           |           |         |           |        |         |       |         |
| FCH15             | 33.534                    | (35.749)  | 20.006  | (20.400)  | 13.313 | (9.606) | 5.100 | (.434)  |
| MHC1I             | 25.558                    | (32.108)  | 13.040  | (17.987)  | 5.700  | (6.403) | 1.329 | (1.817) |
| MHOODS            | 1.462                     | (1.258)   | 1.441   | (1.123)   | 1.455  | (1.163) | 1.339 | (1.080) |
| LCHI              | 52.102                    | (37.556)  | 28.232  | (20.352)  |        |         |       |         |
| MSOS              | 93.236                    | (111.163) | 553.979 | (417.479) |        |         |       |         |
| <b>PC</b>         |                           |           |         |           |        |         |       |         |
| FCH15             | 15.909                    | (14.766)  | 13.786  | (10.430)  | 8.103  | (5.768) | *     | (*)     |
| MHC1I             | 10.099                    | (14.762)  | 6.576   | (9.615)   | 2.853  | (4.454) | .588  | (.884)  |
| MHOODS            | 1.112                     | (.365)    | 1.171   | (.552)    | 1.116  | (.440)  | 1.051 | (.720)  |
| LCHI              | **                        | (**)      | 13.011  | (17.332)  |        |         |       |         |
| MSOS              | **                        | (**)      | 97.069  | (133.785) |        |         |       |         |
| <b>AS</b>         |                           |           |         |           |        |         |       |         |
| FCH15             | 24.742                    | (25.219)  | 18.128  | (16.659)  | 11.036 | (8.409) | *     | (*)     |
| MHC1I             | 17.154                    | (21.807)  | 12.165  | (15.563)  | 3.808  | (4.168) | 1.252 | (1.494) |
| MHOODS            | 1.091                     | (.454)    | 1.143   | (.582)    | 1.098  | (.481)  | 1.372 | (1.141) |
| LCHI              | 23.428                    | (21.998)  | 14.369  | (14.297)  |        |         |       |         |
| MSOS              | 63.578                    | (65.579)  | 98.258  | (102.632) |        |         |       |         |
| <b>MK</b>         |                           |           |         |           |        |         |       |         |
| FCH15             | 8.343                     | (8.568)   | 5.863   | (4.871)   | 5.257  | (4.303) | 7.044 | (5.142) |
| MHC1I             | 4.413                     | (8.771)   | 1.847   | (3.295)   | 1.156  | (3.158) | 1.272 | (2.048) |
| MHOODS            | 1.004                     | (.228)    | 1.000   | (.207)    | 1.018  | (.270)  | 1.176 | (.900)  |
| LCHI              | 8.330                     | (11.336)  | 4.432   | (5.856)   |        |         |       |         |
| MSOS              | 21.986                    | (34.804)  | 20.828  | (30.490)  |        |         |       |         |
| <b>MC</b>         |                           |           |         |           |        |         |       |         |
| FCH15             | 13.400                    | (10.337)  | 8.933   | (5.806)   | 6.760  | (4.786) | 4.559 | (.000)  |
| MHC1I             | 7.165                     | (6.870)   | 3.395   | (4.097)   | 1.899  | (2.914) | .788  | (1.040) |
| MHOODS            | 1.018                     | (.253)    | 1.025   | (.248)    | 1.028  | (.288)  | 1.116 | (.548)  |
| LCHI              | 13.504                    | (10.780)  | 5.917   | (4.824)   |        |         |       |         |
| MSOS              | 37.160                    | (23.938)  | 36.032  | (31.786)  |        |         |       |         |
| <b>EI</b>         |                           |           |         |           |        |         |       |         |
| FCH15             | 9.984                     | (6.431)   | 5.145   | (4.119)   | 7.734  | (3.470) | *     | (*)     |
| MHC1I             | 4.716                     | (6.781)   | 1.220   | (1.314)   | 2.867  | (3.109) | 1.086 | (1.578) |
| MHOODS            | 1.035                     | (.227)    | 1.020   | (.153)    | 1.058  | (.374)  | 1.140 | (.577)  |
| LCHI              | 8.959                     | (7.715)   | 4.812   | (5.181)   |        |         |       |         |
| MSOS              | 19.704                    | (20.301)  | 27.717  | (32.823)  |        |         |       |         |

**Note.** LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

\*Values were not computed since Full Chi-Square was not able to establish five score intervals.

\*\*Values were not computed since parameter estimates from LOGIST5 did not converge.

**Table C-4. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 15B, Subgroup Male vs Female**

| Subtest/<br>Index | <u>Random Sample Size</u> |           |         |           |        |          |       |         |
|-------------------|---------------------------|-----------|---------|-----------|--------|----------|-------|---------|
|                   | N=2000                    |           | N=1000  |           | N=500  |          | N=100 |         |
| <b>GS</b>         |                           |           |         |           |        |          |       |         |
| FCHIS             | 44.367                    | (63.472)  | 23.535  | (23.317)  | 13.884 | (17.710) | 8.294 | (6.207) |
| MHCHI             | 36.169                    | (51.119)  | 16.493  | (19.808)  | 9.754  | (14.959) | 1.978 | (2.854) |
| MHOODS            | 1.099                     | (.626)    | 1.088   | (.596)    | 1.112  | (.746)   | 1.212 | (.963)  |
| LCHI              | 43.538                    | (63.951)  | 22.549  | (27.143)  |        |          |       |         |
| MSOS              | 90.744                    | (114.119) | 94.992  | (95.548)  |        |          |       |         |
| <b>AR</b>         |                           |           |         |           |        |          |       |         |
| FCHIS             | 14.213                    | (12.047)  | 8.959   | (7.488)   | 6.682  | (3.758)  | 4.851 | (2.876) |
| MHCHI             | 7.824                     | (10.775)  | 5.030   | (6.241)   | 2.597  | (3.091)  | .919  | (1.534) |
| MHOODS            | 1.018                     | (.244)    | 1.033   | (.283)    | 1.067  | (.349)   | 1.120 | (.559)  |
| LCHI              | 14.888                    | (15.103)  | 8.546   | (9.076)   |        |          |       |         |
| MSOS              | 20.957                    | (24.088)  | 28.473  | (30.943)  |        |          |       |         |
| <b>WK</b>         |                           |           |         |           |        |          |       |         |
| FCHIS             | 23.660                    | (26.368)  | 13.615  | (11.740)  | 9.655  | (7.858)  | 7.285 | (5.264) |
| MHCHI             | 17.654                    | (26.034)  | 8.458   | (11.628)  | 4.290  | (7.235)  | 1.749 | (3.070) |
| MHOODS            | 1.062                     | (.442)    | 1.053   | (.484)    | 1.087  | (.518)   | 1.170 | (.743)  |
| LCHI              | 24.785                    | (29.686)  | 16.454  | (17.675)  |        |          |       |         |
| MSOS              | 42.886                    | (53.402)  | 45.333  | (54.975)  |        |          |       |         |
| <b>PC</b>         |                           |           |         |           |        |          |       |         |
| FCHIS             | 18.704                    | (21.259)  | 9.651   | (5.869)   | 9.256  | (10.051) | 1.267 | (.000)  |
| MHCHI             | 13.868                    | (24.022)  | 5.189   | (6.255)   | 5.528  | (9.660)  | .516  | (.915)  |
| MHOODS            | 1.065                     | (.485)    | 1.027   | (.340)    | 1.077  | (.753)   | 1.081 | (.513)  |
| LCHI              | 23.451                    | (38.072)  | 14.538  | (11.679)  |        |          |       |         |
| MSOS              | 31.977                    | (46.259)  | 438.097 | (418.372) |        |          |       |         |
| <b>AS</b>         |                           |           |         |           |        |          |       |         |
| FCHIS             | 24.524                    | (21.494)  | 14.303  | (12.601)  | 12.111 | (9.703)  | 1.610 | (.000)  |
| MHCHI             | 14.520                    | (16.601)  | 7.270   | (11.168)  | 3.967  | (4.913)  | 1.410 | (2.354) |
| MHOODS            | 1.052                     | (.336)    | 1.051   | (.366)    | 1.069  | (.399)   | 1.128 | (.594)  |
| LCHI              | 26.384                    | (25.826)  | 13.620  | (17.572)  |        |          |       |         |
| MSOS              | 58.171                    | (55.659)  | 75.595  | (96.857)  |        |          |       |         |
| <b>MK</b>         |                           |           |         |           |        |          |       |         |
| FCHIS             | 13.852                    | (10.858)  | 9.614   | (7.273)   | 8.494  | (5.365)  | 4.834 | (2.059) |
| MHCHI             | 8.271                     | (9.326)   | 5.557   | (7.201)   | 2.128  | (2.539)  | .595  | (1.111) |
| MHOODS            | 1.011                     | (.246)    | 1.014   | (.296)    | 1.030  | (.271)   | 1.032 | (.343)  |
| LCHI              | 11.625                    | (7.554)   | 6.771   | (6.772)   |        |          |       |         |
| MSOS              | 21.104                    | (15.735)  | 24.450  | (23.022)  |        |          |       |         |
| <b>MC</b>         |                           |           |         |           |        |          |       |         |
| FCHIS             | 17.628                    | (19.798)  | 13.397  | (14.935)  | 9.291  | (8.440)  | 1.843 | (.000)  |
| MHCHI             | 10.144                    | (14.758)  | 6.932   | (9.713)   | 4.305  | (6.027)  | 1.326 | (1.173) |
| MHOODS            | 1.045                     | (.279)    | 1.064   | (.344)    | 1.080  | (.411)   | 1.139 | (.603)  |
| LCHI              | 19.907                    | (20.641)  | 8.192   | (7.648)   |        |          |       |         |
| MSOS              | 26.016                    | (28.869)  | 235.787 | (133.720) |        |          |       |         |
| <b>EI</b>         |                           |           |         |           |        |          |       |         |
| FCHIS             | 27.952                    | (33.908)  | 19.786  | (20.601)  | 12.471 | (9.831)  | 3.166 | (1.955) |
| MHCHI             | 20.009                    | (29.944)  | 12.384  | (18.383)  | 6.178  | (8.635)  | 1.225 | (1.643) |
| MHOODS            | 1.071                     | (.438)    | 1.073   | (.490)    | 1.085  | (.464)   | 1.077 | (.542)  |
| LCHI              | 27.075                    | (28.544)  | 15.929  | (15.871)  |        |          |       |         |
| MSOS              | 72.990                    | (85.541)  | 85.039  | (101.175) |        |          |       |         |

Note. LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

**Table C-5. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 15C, Subgroup White vs White**

| Subtest/<br>Index | <u>Random Sample Size</u> |           |         |           |       |         |               |
|-------------------|---------------------------|-----------|---------|-----------|-------|---------|---------------|
|                   | N=2000                    |           | N=1000  |           | N=500 |         | N=100         |
| GS                |                           |           |         |           |       |         |               |
| FCH15             | 3.859                     | (2.458)   | 3.981   | (2.641)   | 4.308 | (2.470) | 4.929 (2.437) |
| MHC1I             | .725                      | (.989)    | .484    | (.763)    | .509  | (.691)  | .711 (1.168)  |
| MHOODS            | .997                      | (.083)    | 1.033   | (.136)    | .989  | (.147)  | .999 (.418)   |
| LCH1              | 16.725                    | (20.890)  | 11.244  | (12.271)  |       |         |               |
| MSOS              | 19.348                    | (16.086)  | 28.838  | (23.140)  |       |         |               |
| AR                |                           |           |         |           |       |         |               |
| FCH15             | 3.805                     | (2.896)   | 5.537   | (3.379)   | 5.291 | (2.353) | 4.406 (2.278) |
| MHC1I             | .782                      | (1.212)   | 1.039   | (1.300)   | .973  | (1.300) | .698 (.842)   |
| MHOODS            | .993                      | (.094)    | .995    | (.135)    | 1.018 | (.183)  | 1.111 (.543)  |
| LCH1              | 15.780                    | (15.634)  | 13.837  | (11.784)  |       |         |               |
| MSOS              | 20.135                    | (27.712)  | 26.689  | (28.910)  |       |         |               |
| WK                |                           |           |         |           |       |         |               |
| FCH15             | 3.502                     | (1.927)   | 3.960   | (2.583)   | 5.035 | (3.309) | 6.361 (4.358) |
| MHC1I             | .573                      | (.585)    | .418    | (.670)    | .537  | (1.013) | .873 (1.449)  |
| MHOODS            | 1.015                     | (.105)    | 1.026   | (.168)    | 1.065 | (.250)  | 1.264 (1.190) |
| LCH1              | 13.415                    | (19.761)  | 11.046  | (13.648)  |       |         |               |
| MSOS              | 9.266                     | (12.523)  | 11.917  | (13.452)  |       |         |               |
| PC                |                           |           |         |           |       |         |               |
| FCH15             | 3.855                     | (3.021)   | 4.910   | (3.615)   | 6.534 | (3.993) | *             |
| MHC1I             | .468                      | (.765)    | 1.074   | (1.470)   | .834  | (1.442) | .456 (.610)   |
| MHOODS            | 1.013                     | (.086)    | 1.022   | (.162)    | 1.006 | (.182)  | 1.111 (.543)  |
| LCH1              | 28.074                    | (37.268)  | 28.966  | (42.095)  |       |         |               |
| MSOS              | 170.917                   | (169.393) | 343.242 | (220.977) |       |         |               |
| AS                |                           |           |         |           |       |         |               |
| FCH15             | 4.527                     | (2.821)   | 4.098   | (2.581)   | 5.057 | (3.727) | 3.804 (2.720) |
| MHC1I             | .599                      | (.745)    | .664    | (1.158)   | 1.030 | (1.415) | .945 (1.323)  |
| MHOODS            | .999                      | (.064)    | 1.011   | (.097)    | 1.022 | (.189)  | 1.082 (.526)  |
| LCH1              | 14.371                    | (14.335)  | 8.382   | (8.252)   |       |         |               |
| MSOS              | 20.194                    | (30.151)  | 24.371  | (32.253)  |       |         |               |
| MK                |                           |           |         |           |       |         |               |
| FCH15             | 3.668                     | (2.213)   | 4.154   | (2.595)   | 5.544 | (4.142) | 4.932 (2.147) |
| MHC1I             | .364                      | (.362)    | .805    | (1.242)   | .895  | (1.009) | .596 (.970)   |
| MHOODS            | 1.001                     | (.051)    | .999    | (.116)    | 1.013 | (.160)  | 1.079 (.381)  |
| LCH1              | 19.613                    | (21.222)  | 13.483  | (19.178)  |       |         |               |
| MSOS              | 39.958                    | (70.855)  | 43.672  | (71.590)  |       |         |               |
| MC                |                           |           |         |           |       |         |               |
| FCH15             | 4.335                     | (2.366)   | 3.880   | (2.252)   | 3.907 | (1.851) | 4.069 (2.968) |
| MHC1I             | .467                      | (.868)    | .910    | (1.389)   | .482  | (.811)  | .597 (.720)   |
| MHOODS            | 1.002                     | (.055)    | 1.013   | (.122)    | 1.007 | (.129)  | 1.026 (.380)  |
| LCH1              | 34.700                    | (33.568)  | 16.903  | (16.275)  |       |         |               |
| MSOS              | 28.855                    | (34.186)  | 39.580  | (38.896)  |       |         |               |
| EI                |                           |           |         |           |       |         |               |
| FCH15             | 3.806                     | (2.341)   | 4.610   | (2.790)   | 4.739 | (3.842) | 4.814 (1.724) |
| MHC1I             | .957                      | (1.317)   | .698    | (1.083)   | 1.111 | (2.331) | .717 (.774)   |
| MHOODS            | 1.002                     | (.083)    | 1.007   | (.117)    | .996  | (.181)  | 1.027 (.393)  |
| LCH1              | 20.496                    | (26.947)  | 13.299  | (17.753)  |       |         |               |
| MSOS              | 11.781                    | (13.207)  | 22.275  | (22.858)  |       |         |               |

**Note.** LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

\* Values were not computed since Full Chi-Square was not able to establish five score intervals.

**Table C-6. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 15C, Subgroup White vs Black**

| Subtest/<br>Index | <u>Random Sample Size</u> |           |        |          |        |          |        |
|-------------------|---------------------------|-----------|--------|----------|--------|----------|--------|
|                   | N=2000                    |           | N=1000 |          | N=500  | N=100    |        |
| <b>GS</b>         |                           |           |        |          |        |          |        |
| FCH15             | 23.165                    | (24.511)  | 15.724 | (13.644) | 8.564  | (7.793)  | *      |
| MHC1              | 14.067                    | (16.459)  | 9.313  | (10.041) | 4.018  | (5.355)  | 1.324  |
| MHOODS            | 1.116                     | (.440)    | 1.179  | (.616)   | 1.196  | (.782)   | 1.290  |
| LCHI              | 14.823                    | (13.073)  | 9.571  | (7.839)  |        |          | (.933) |
| MSOS              | 42.128                    | (34.486)  | 61.771 | (69.421) |        |          |        |
| <b>AR</b>         |                           |           |        |          |        |          |        |
| FCH15             | 13.559                    | (10.463)  | 8.802  | (7.291)  | 8.222  | (6.342)  | 8.290  |
| MHC1              | 4.992                     | (5.940)   | 2.914  | (3.827)  | 1.984  | (2.892)  | .819   |
| MHOODS            | 1.014                     | (.210)    | 1.033  | (.240)   | 1.033  | (.287)   | 1.087  |
| LCHI              | 12.233                    | (12.121)  | 7.339  | (6.797)  |        |          | (.515) |
| MSOS              | 23.784                    | (21.136)  | 32.284 | (33.910) |        |          |        |
| <b>WK</b>         |                           |           |        |          |        |          |        |
| FCH15             | 29.813                    | (39.114)  | 15.392 | (15.995) | 11.084 | (10.977) | 7.174  |
| MHC1              | 18.537                    | (30.079)  | 6.878  | (12.138) | 3.499  | (6.892)  | .990   |
| MHOODS            | 1.127                     | (.558)    | 1.066  | (.462)   | 1.088  | (.526)   | 1.238  |
| LCHI              | 23.024                    | (35.252)  | 9.737  | (11.541) |        |          | (.950) |
| MSOS              | 47.869                    | (61.727)  | 42.810 | (57.475) |        |          |        |
| <b>PC</b>         |                           |           |        |          |        |          |        |
| FCH15             | 27.850                    | (28.140)  | 15.033 | (12.767) | 9.655  | (8.319)  | 6.151  |
| MHC1              | 20.090                    | (25.536)  | 6.948  | (9.660)  | 5.081  | (6.608)  | 1.284  |
| MHOODS            | 1.062                     | (.431)    | 1.062  | (.378)   | 1.068  | (.458)   | 1.115  |
| LCHI              | 49.370                    | (42.185)  | 12.797 | (13.933) |        |          | (.558) |
| MSOS              | 58.437                    | (56.611)  | 77.125 | (52.199) |        |          |        |
| <b>AS</b>         |                           |           |        |          |        |          |        |
| FCH15             | 16.104                    | (16.086)  | 12.118 | (11.698) | 8.643  | (7.336)  | *      |
| MHC1              | 8.463                     | (10.716)  | 5.679  | (8.659)  | 2.772  | (3.480)  | .961   |
| MHOODS            | 1.023                     | (.276)    | 1.035  | (.315)   | 1.036  | (.313)   | 1.116  |
| LCHI              | 14.201                    | (10.128)  | 9.689  | (10.359) |        |          | (.563) |
| MSOS              | 44.213                    | (39.696)  | 54.897 | (61.590) |        |          |        |
| <b>MK</b>         |                           |           |        |          |        |          |        |
| FCH15             | 26.964                    | (19.867)  | 16.285 | (11.432) | 10.750 | (6.629)  | 7.702  |
| MHC1              | 17.475                    | (13.657)  | 8.197  | (8.538)  | 4.313  | (4.801)  | 1.025  |
| MHOODS            | 1.087                     | (.403)    | 1.086  | (.408)   | 1.084  | (.390)   | 1.171  |
| LCHI              | 27.031                    | (22.768)  | 13.442 | (12.081) |        |          | (.595) |
| MSOS              | 63.400                    | (62.224)  | 66.330 | (73.454) |        |          |        |
| <b>MC</b>         |                           |           |        |          |        |          |        |
| FCH15             | 12.513                    | (12.602)  | 8.186  | (6.448)  | 6.671  | (4.863)  | 7.041  |
| MHC1              | 4.030                     | (5.675)   | 1.625  | (2.501)  | 1.447  | (2.875)  | .589   |
| MHOODS            | 1.016                     | (.182)    | 1.009  | (.169)   | 1.026  | (.244)   | 1.055  |
| LCHI              | 13.800                    | (12.634)  | 7.552  | (6.980)  |        |          | (.377) |
| MSOS              | 18.641                    | (14.794)  | 23.299 | (20.066) |        |          |        |
| <b>EI</b>         |                           |           |        |          |        |          |        |
| FCH15             | 11.575                    | (12.119)  | 11.208 | (12.299) | 5.853  | (3.127)  | *      |
| MHC1              | 5.368                     | (7.018)   | 4.650  | (7.095)  | 1.295  | (1.918)  | .426   |
| MHOODS            | 1.021                     | (.215)    | 1.046  | (.331)   | 1.017  | (.206)   | 1.031  |
| LCHI              | 12.262                    | (11.138)  | 16.930 | (19.978) |        |          | (.326) |
| MSOS              | 167.830                   | (112.630) | 48.236 | (50.573) |        |          |        |

**Note.** LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

\* Values were not computed since Full Chi-Square was not able to establish five score intervals.

**Table C-7. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 15C, Subgroup White vs Hispanic**

| Subtest/<br>Index | <u>Random Sample Size</u> |           |         |           |        |          |                  |
|-------------------|---------------------------|-----------|---------|-----------|--------|----------|------------------|
|                   | N=2000                    |           | N=1000  |           | N=500  | N=100    |                  |
| <b>GS</b>         |                           |           |         |           |        |          |                  |
| FCH15             | 15.535                    | (14.968)  | 11.906  | (9.536)   | 6.554  | (3.550)  | *                |
| MHCHI             | 8.354                     | (10.813)  | 5.745   | (6.629)   | 2.404  | (2.985)  | .459<br>(.700)   |
| MHOODS            | 1.104                     | (.391)    | 1.156   | (.522)    | 1.123  | (.484)   | 1.078<br>(.377)  |
| LCHI              | 9.458                     | (10.245)  | 7.014   | (5.556)   |        |          |                  |
| MSOS              | 32.108                    | (45.455)  | 45.102  | (45.096)  |        |          |                  |
| <b>AR</b>         |                           |           |         |           |        |          |                  |
| FCH15             | 9.446                     | (9.280)   | 7.231   | (5.922)   | 6.430  | (4.568)  | *                |
| MHCHI             | 3.829                     | (7.788)   | 2.177   | (3.579)   | 1.231  | (2.173)  | .887<br>(1.257)  |
| MHOODS            | 1.016                     | (.226)    | 1.023   | (.241)    | 1.025  | (.278)   | 1.209<br>(.718)  |
| LCHI              | 11.920                    | (12.947)  | 8.389   | (7.499)   |        |          |                  |
| MSOS              | 19.936                    | (24.843)  | 28.862  | (28.321)  |        |          |                  |
| <b>WK</b>         |                           |           |         |           |        |          |                  |
| FCH15             | 42.195                    | (63.786)  | 23.646  | (30.155)  | 14.845 | (17.825) | *                |
| MHCHI             | 32.933                    | (56.320)  | 14.858  | (24.701)  | 6.848  | (12.434) | 1.463<br>(2.046) |
| MHOODS            | 1.350                     | (1.250)   | 1.279   | (1.079)   | 1.223  | (1.091)  | 1.197<br>(1.000) |
| LCHI              | 34.097                    | (48.224)  | 14.233  | (16.947)  |        |          |                  |
| MSOS              | 106.564                   | (127.120) | 100.916 | (108.737) |        |          |                  |
| <b>PC</b>         |                           |           |         |           |        |          |                  |
| FCH15             | 13.613                    | (7.979)   | 9.367   | (5.685)   | 7.215  | (7.262)  | *                |
| MHCHI             | 7.147                     | (7.095)   | 2.559   | (2.258)   | 2.239  | (4.319)  | 1.252<br>(1.620) |
| MHOODS            | 1.054                     | (.320)    | 1.048   | (.262)    | 1.042  | (.383)   | 1.213<br>(.928)  |
| LCHI              | 11.448                    | (9.171)   | 8.914   | (6.570)   |        |          |                  |
| MSOS              | 38.734                    | (34.757)  | 62.961  | (34.570)  |        |          |                  |
| <b>AS</b>         |                           |           |         |           |        |          |                  |
| FCH15             | 15.874                    | (17.225)  | 11.409  | (8.497)   | 7.792  | (6.530)  | *                |
| MHCHI             | 10.341                    | (14.453)  | 8.707   | (10.674)  | 2.897  | (3.691)  | 1.377<br>(2.400) |
| MHOODS            | 1.034                     | (.321)    | 1.044   | (.346)    | 1.053  | (.379)   | 1.236<br>(1.068) |
| LCHI              | 14.648                    | (15.696)  | 8.914   | (9.231)   |        |          |                  |
| MSOS              | 53.032                    | (66.692)  | 62.440  | (67.641)  |        |          |                  |
| <b>MK</b>         |                           |           |         |           |        |          |                  |
| FCH15             | 13.030                    | (11.495)  | 9.498   | (6.373)   | 7.397  | (4.677)  | 7.675<br>(.000)  |
| MHCHI             | 6.798                     | (8.713)   | 4.606   | (5.680)   | 2.631  | (3.758)  | 1.347<br>(2.247) |
| MHOODS            | 1.053                     | (.292)    | 1.063   | (.346)    | 1.073  | (.337)   | 1.260<br>(.780)  |
| LCHI              | 11.635                    | (9.651)   | 7.159   | (6.098)   |        |          |                  |
| MSOS              | 35.894                    | (44.243)  | 47.516  | (51.801)  |        |          |                  |
| <b>MC</b>         |                           |           |         |           |        |          |                  |
| FCH15             | 9.718                     | (11.713)  | 6.099   | (5.056)   | 6.583  | (3.991)  | *                |
| MHCHI             | 4.475                     | (7.472)   | 1.975   | (3.658)   | 1.262  | (2.255)  | 1.272<br>(1.815) |
| MHOODS            | 1.015                     | (.228)    | 1.012   | (.222)    | 1.031  | (.261)   | 1.148<br>(.734)  |
| LCHI              | 7.467                     | (7.468)   | 4.815   | (4.162)   |        |          |                  |
| MSOS              | 23.043                    | (24.999)  | 27.556  | (25.766)  |        |          |                  |
| <b>EI</b>         |                           |           |         |           |        |          |                  |
| FCH15             | 9.669                     | (7.675)   | 9.725   | (8.959)   | 6.496  | (4.921)  | *                |
| MHCHI             | 5.607                     | (6.483)   | 4.287   | (5.699)   | 2.172  | (4.066)  | .426<br>(.500)   |
| MHOODS            | 1.024                     | (.237)    | 1.043   | (.347)    | 1.040  | (.316)   | 1.048<br>(.371)  |
| LCHI              | 9.486                     | (10.429)  | 12.642  | (14.030)  |        |          |                  |
| MSOS              | 32.842                    | (43.122)  | 65.770  | (73.958)  |        |          |                  |

**Note.** LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

\* Values were not computed since Full Chi-Square was not able to establish five score intervals.

**Table C-8. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 15C,  
Subgroup Male vs Female**

| Subtest/<br>Index | <u>Random Sample Size</u> |           |         |           |        |          |       |         |
|-------------------|---------------------------|-----------|---------|-----------|--------|----------|-------|---------|
|                   | N=2000                    |           | N=1000  |           | N=500  |          | N=100 |         |
| <b>GS</b>         |                           |           |         |           |        |          |       |         |
| FCH15             | 60.364                    | (56.005)  | 32.358  | (29.178)  | 16.720 | (15.219) | 5.938 | (2.999) |
| MHCHI             | 49.779                    | (52.358)  | 25.834  | (25.697)  | 11.405 | (13.374) | 3.045 | (4.183) |
| MHOODS            | 1.183                     | (.651)    | 1.190   | (.676)    | 1.182  | (.678)   | 1.215 | (.918)  |
| LCHI              | 55.919                    | (57.869)  | 29.673  | (26.383)  |        |          |       |         |
| MSOS              | 123.399                   | (133.987) | 132.183 | (125.154) |        |          |       |         |
| <b>AR</b>         |                           |           |         |           |        |          |       |         |
| FCH15             | 13.901                    | (14.628)  | 8.095   | (6.213)   | 5.777  | (3.974)  | 6.250 | (3.777) |
| MHCHI             | 9.003                     | (14.109)  | 4.133   | (5.870)   | 1.851  | (2.679)  | .829  | (1.037) |
| MHOODS            | 1.030                     | (.250)    | 1.031   | (.240)    | 1.023  | (.249)   | 1.079 | (.440)  |
| LCHI              | 10.215                    | (11.292)  | 11.974  | (17.442)  |        |          |       |         |
| MSOS              | 25.961                    | (22.275)  | 24.029  | (25.390)  |        |          |       |         |
| <b>WK</b>         |                           |           |         |           |        |          |       |         |
| FCH15             | 26.458                    | (41.755)  | 17.573  | (24.939)  | 10.920 | (10.359) | 5.800 | (5.430) |
| MHCHI             | 21.201                    | (40.182)  | 12.418  | (25.503)  | 5.741  | (10.252) | 1.522 | (2.261) |
| MHOODS            | 1.083                     | (.648)    | 1.120   | (.779)    | 1.105  | (.676)   | 1.164 | (.804)  |
| LCHI              | 30.761                    | (37.512)  | 15.915  | (25.113)  |        |          |       |         |
| MSOS              | 46.431                    | (76.227)  | 57.688  | (92.332)  |        |          |       |         |
| <b>PC</b>         |                           |           |         |           |        |          |       |         |
| FCH15             | 12.558                    | (13.97)   | 8.993   | (5.754)   | 7.087  | (6.335)  | 5.906 | (.000)  |
| MHCHI             | 8.143                     | (13.138)  | 3.999   | (5.622)   | 3.920  | (5.484)  | .757  | (1.303) |
| MHOODS            | 1.012                     | (.293)    | 1.012   | (.293)    | 1.056  | (.400)   | 1.061 | (.526)  |
| LCHI              | 21.213                    | (22.367)  | 28.622  | (32.846)  |        |          |       |         |
| MSOS              | 265.20                    | (334.340) | 35.891  | (27.556)  |        |          |       |         |
| <b>AS</b>         |                           |           |         |           |        |          |       |         |
| FCH15             | 38.384                    | (57.325)  | 21.379  | (27.275)  | 14.883 | (10.918) | 7.675 | (3.949) |
| MHCHI             | 27.278                    | (43.608)  | 12.019  | (19.053)  | 5.814  | (7.471)  | 1.477 | (2.176) |
| MHOODS            | 1.158                     | (.660)    | 1.140   | (.602)    | 1.171  | (.664)   | 1.264 | (1.033) |
| LCHI              | 28.797                    | (34.185)  | 13.771  | (15.833)  |        |          |       |         |
| MSOS              | 85.215                    | (75.382)  | 78.362  | (66.144)  |        |          |       |         |
| <b>MK</b>         |                           |           |         |           |        |          |       |         |
| FCH15             | 16.348                    | (11.547)  | 10.508  | (7.042)   | 7.907  | (4.477)  | 6.364 | (4.087) |
| MHCHI             | 9.795                     | (10.909)  | 4.649   | (4.293)   | 2.240  | (2.957)  | .892  | (.951)  |
| MHOODS            | 1.057                     | (.289)    | 1.052   | (.268)    | 1.060  | (.303)   | 1.097 | (.454)  |
| LCHI              | 20.012                    | (17.632)  | 10.690  | (8.839)   |        |          |       |         |
| MSOS              | 34.103                    | (36.619)  | 33.606  | (27.660)  |        |          |       |         |
| <b>MC</b>         |                           |           |         |           |        |          |       |         |
| FCH15             | 14.792                    | (14.986)  | 10.816  | (9.935)   | 7.984  | (5.386)  | 5.487 | (2.524) |
| MHCHI             | 6.900                     | (9.203)   | 4.932   | (7.451)   | 2.372  | (3.829)  | .935  | (1.562) |
| MHOODS            | 1.029                     | (.228)    | 1.048   | (.300)    | 1.037  | (.253)   | 1.075 | (.486)  |
| LCHI              | 18.379                    | (12.741)  | 10.883  | (9.257)   |        |          |       |         |
| MSOS              | 37.668                    | (41.314)  | 55.392  | (46.422)  |        |          |       |         |
| <b>EI</b>         |                           |           |         |           |        |          |       |         |
| FCH15             | 20.392                    | (21.072)  | 11.427  | (11.981)  | 8.458  | (5.358)  | *     | (*)     |
| MHCHI             | 11.959                    | (16.322)  | 5.827   | (8.448)   | 2.670  | (4.733)  | 1.251 | (2.293) |
| MHOODS            | 1.056                     | (.326)    | 1.050   | (.317)    | 1.043  | (.272)   | 1.135 | (.661)  |
| LCHI              | 15.984                    | (13.948)  | 10.732  | (8.718)   |        |          |       |         |
| MSOS              | 36.333                    | (29.755)  | 233.773 | (157.104) |        |          |       |         |

**Note.** LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

\* Values were not computed since Full Chi-Square was not able to establish five score intervals.

**Table C-9. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 16A, Subgroup White vs White**

| Subtest/<br>Index | <u>Random Sample Size</u> |          |        |          |       |         |               |
|-------------------|---------------------------|----------|--------|----------|-------|---------|---------------|
|                   | N=2000                    | N=1000   |        | N=500    | N=100 |         |               |
| <b>GS</b>         |                           |          |        |          |       |         |               |
| FCHI5             | 3.912                     | (2.637)  | 5.056  | (3.390)  | 4.511 | (2.738) | 5.432 (2.366) |
| MHCHI             | .841                      | (1.373)  | .846   | (1.657)  | .773  | (1.224) | .476 (.863)   |
| MHOODS            | 1.018                     | (.088)   | 1.011  | (.128)   | 1.024 | (.176)  | 1.083 (.496)  |
| LCHI              | 19.198                    | (21.822) | 9.303  | (11.319) |       |         |               |
| MSOS              | 16.175                    | (35.514) | 22.681 | (31.783) |       |         |               |
| <b>AR</b>         |                           |          |        |          |       |         |               |
| FCHI5             | 3.443                     | (2.435)  | 4.342  | (2.366)  | 4.276 | (2.409) | 4.797 (2.851) |
| MHCHI             | .652                      | (.844)   | .901   | (1.239)  | .847  | (1.176) | .674 (.942)   |
| MHOODS            | .997                      | (.074)   | 1.008  | (.113)   | 1.015 | (.169)  | 1.121 (.519)  |
| LCHI              | 13.781                    | (17.134) | 8.320  | (11.959) |       |         |               |
| MSOS              | 12.436                    | (18.261) | 17.506 | (17.009) |       |         |               |
| <b>WK</b>         |                           |          |        |          |       |         |               |
| FCHI5             | 4.135                     | (2.392)  | 3.832  | (2.361)  | 3.682 | (1.844) | 4.342 (2.787) |
| MHCHI             | .367                      | (.499)   | .442   | (.636)   | .484  | (.730)  | .564 (1.454)  |
| MHOODS            | 1.001                     | (.092)   | .955   | (.130)   | .950  | (.259)  | 1.101 (.725)  |
| LCHI              | 11.008                    | (16.888) | 8.415  | (12.319) |       |         |               |
| MSOS              | 9.332                     | (13.552) | 15.084 | (22.098) |       |         |               |
| <b>PC</b>         |                           |          |        |          |       |         |               |
| FCHI5             | 4.540                     | (2.215)  | 5.102  | (2.361)  | 5.963 | (3.498) | *             |
| MHCHI             | .694                      | (.834)   | .810   | (1.197)  | .899  | (1.160) | .807 (1.247)  |
| MHOODS            | 1.022                     | (.120)   | 1.028  | (.160)   | 1.011 | (.215)  | 1.146 (.644)  |
| LCHI              | 28.837                    | (27.997) | 14.909 | (20.584) |       |         |               |
| MSOS              | 52.234                    | (57.550) | 64.572 | (75.524) |       |         |               |
| <b>AS</b>         |                           |          |        |          |       |         |               |
| FCHI5             | 3.771                     | (2.769)  | 4.443  | (3.070)  | 5.030 | (3.049) | 4.830 (2.549) |
| MHCHI             | .692                      | (1.034)  | .847   | (1.540)  | .782  | (1.076) | 1.585 (2.022) |
| MHOODS            | .999                      | (.072)   | 1.015  | (.131)   | 1.043 | (.217)  | 1.198 (.749)  |
| LCHI              | 17.046                    | (27.630) | 11.423 | (18.544) |       |         |               |
| MSOS              | 21.888                    | (25.456) | 29.475 | (30.965) |       |         |               |
| <b>MK</b>         |                           |          |        |          |       |         |               |
| FCHI5             | 3.799                     | (1.659)  | 3.962  | (2.103)  | 5.081 | (3.548) | 5.306 (2.838) |
| MHCHI             | .852                      | (1.083)  | .819   | (.873)   | .544  | (.982)  | .482 (.849)   |
| MHOODS            | 1.012                     | (.080)   | 1.005  | (.111)   | 1.002 | (.143)  | 1.025 (.335)  |
| LCHI              | 16.009                    | (24.014) | 9.125  | (8.688)  |       |         |               |
| MSOS              | 28.979                    | (70.175) | 29.642 | (49.808) |       |         |               |
| <b>MC</b>         |                           |          |        |          |       |         |               |
| FCHI5             | 3.534                     | (2.063)  | 4.873  | (3.519)  | 4.401 | (2.595) | 5.632 (4.020) |
| MHCHI             | .816                      | (.948)   | .664   | (1.162)  | 1.348 | (1.821) | .794 (1.299)  |
| MHOODS            | 1.003                     | (.075)   | 1.004  | (.092)   | 1.026 | (.204)  | 1.048 (.431)  |
| LCHI              | 20.578                    | (32.682) | 11.690 | (14.788) |       |         |               |
| MSOS              | 12.982                    | (12.969) | 18.999 | (17.627) |       |         |               |
| <b>EI</b>         |                           |          |        |          |       |         |               |
| FCHI5             | 3.182                     | (1.907)  | 5.160  | (2.934)  | 4.401 | (2.423) | 5.871 (3.204) |
| MHCHI             | .644                      | (.789)   | .684   | (.767)   | .698  | (.879)  | .785 (.766)   |
| MHOODS            | 1.003                     | (.071)   | 1.007  | (.113)   | 1.005 | (.143)  | 1.029 (.434)  |
| LCHI              | 22.199                    | (27.749) | 13.181 | (17.988) |       |         |               |
| MSOS              | 19.670                    | (28.065) | 26.057 | (29.471) |       |         |               |

**Note.** LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

\* Values were not computed since Full Chi-Square was not able to establish five score intervals.

Table C-10. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 16A, Subgroup White vs Black

| Subtest/<br>Index | <u>Random Sample Size</u> |          |         |           |        |         |       |         |
|-------------------|---------------------------|----------|---------|-----------|--------|---------|-------|---------|
|                   | N=2000                    |          | N=1000  |           | N=500  |         | N=100 |         |
| <b>GS</b>         |                           |          |         |           |        |         |       |         |
| FCH15             | 25.109                    | (31.466) | 15.337  | (15.699)  | 11.051 | (8.803) | 3.946 | (.000)  |
| MHCHI             | 17.534                    | (27.004) | 9.327   | (13.062)  | 5.165  | (7.030) | .800  | (1.025) |
| MHOODS            | 1.088                     | (.518)   | 1.084   | (.502)    | 1.104  | (.533)  | 1.146 | (.616)  |
| LCHI              | 25.764                    | (30.910) | 13.940  | (14.244)  |        |         |       |         |
| MSOS              | 45.400                    | (63.915) | 56.840  | (57.615)  |        |         |       |         |
| <b>AR</b>         |                           |          |         |           |        |         |       |         |
| FCH15             | 18.565                    | (20.661) | 12.306  | (11.194)  | 9.283  | (6.980) | 5.108 | (5.081) |
| MHCHI             | 10.165                    | (14.087) | 4.003   | (6.219)   | 3.524  | (4.187) | 1.786 | (2.151) |
| MHOODS            | 1.047                     | (.306)   | 1.031   | (.250)    | 1.072  | (.389)  | 1.193 | (.685)  |
| LCHI              | 19.122                    | (18.586) | 9.213   | (12.687)  |        |         |       |         |
| MSOS              | 42.299                    | (47.370) | 307.482 | (185.252) |        |         |       |         |
| <b>WK</b>         |                           |          |         |           |        |         |       |         |
| FCH15             | 22.669                    | (25.616) | 12.898  | (12.870)  | 9.577  | (8.342) | 6.084 | (4.019) |
| MHCHI             | 13.180                    | (18.079) | 5.681   | (9.066)   | 2.397  | (3.273) | 1.395 | (1.916) |
| MHOODS            | 1.049                     | (.420)   | 1.024   | (.393)    | 1.079  | (.426)  | 1.237 | (1.026) |
| LCHI              | 22.367                    | (27.557) | 14.617  | (14.867)  |        |         |       |         |
| MSOS              | 34.228                    | (41.683) | 35.994  | (39.476)  |        |         |       |         |
| <b>PC</b>         |                           |          |         |           |        |         |       |         |
| FCH15             | 14.316                    | (14.869) | 10.778  | (13.821)  | 6.730  | (4.396) | *     | ( * )   |
| MHCHI             | 7.188                     | (9.130)  | 5.028   | (8.811)   | 2.536  | (3.347) | 1.199 | (2.728) |
| MHOODS            | 1.039                     | (.319)   | 1.030   | (.357)    | 1.025  | (.331)  | 1.147 | (1.047) |
| LCHI              | 19.240                    | (13.600) | 10.708  | (10.757)  |        |         |       |         |
| MSOS              | 24.047                    | (15.675) | 49.335  | (57.037)  |        |         |       |         |
| <b>AS</b>         |                           |          |         |           |        |         |       |         |
| FCH15             | 16.524                    | (12.406) | 13.071  | (11.303)  | 10.947 | (7.068) | *     | ( * )   |
| MHCHI             | 7.793                     | (12.619) | 5.806   | (7.213)   | 2.563  | (3.649) | 2.155 | (2.697) |
| MHOODS            | 1.037                     | (.260)   | 1.065   | (.334)    | 1.048  | (.304)  | 1.218 | (.811)  |
| LCHI              | **                        | ( ** )   | 10.205  | (12.385)  |        |         |       |         |
| MSOS              | **                        | ( ** )   | 65.187  | (75.734)  |        |         |       |         |
| <b>MK</b>         |                           |          |         |           |        |         |       |         |
| FCH15             | 25.299                    | (26.279) | 14.206  | (10.815)  | 9.466  | (5.506) | 6.662 | (3.693) |
| MHCHI             | 19.602                    | (24.136) | 8.092   | (8.840)   | 3.542  | (4.463) | .500  | (.567)  |
| MHOODS            | 1.076                     | (.401)   | 1.058   | (.360)    | 1.043  | (.322)  | 1.043 | (.339)  |
| LCHI              | 25.428                    | (29.233) | 13.606  | (9.648)   |        |         |       |         |
| MSOS              | 54.878                    | (58.744) | 57.310  | (50.411)  |        |         |       |         |
| <b>MC</b>         |                           |          |         |           |        |         |       |         |
| FCH15             | 14.705                    | (13.773) | 8.832   | (7.305)   | 8.281  | (6.100) | 6.503 | (2.944) |
| MHCHI             | 6.213                     | (11.921) | 3.080   | (5.079)   | 2.321  | (4.100) | .962  | (1.387) |
| MHOODS            | 1.020                     | (.215)   | 1.023   | (.230)    | 1.031  | (.253)  | 1.074 | (.443)  |
| LCHI              | 15.141                    | (16.730) | 5.692   | (5.891)   |        |         |       |         |
| MSOS              | 26.562                    | (31.103) | 25.214  | (28.039)  |        |         |       |         |
| <b>EI</b>         |                           |          |         |           |        |         |       |         |
| FCH15             | 21.928                    | (25.840) | 10.414  | (10.261)  | 7.741  | (4.828) | *     | ( * )   |
| MHCHI             | 14.399                    | (21.242) | 4.371   | (5.767)   | 2.403  | (3.389) | .939  | (1.191) |
| MHOODS            | 1.079                     | (.368)   | 1.058   | (.286)    | 1.060  | (.291)  | 1.131 | (.601)  |
| LCHI              | 19.021                    | (26.251) | 7.711   | (8.299)   |        |         |       |         |
| MSOS              | 41.933                    | (60.175) | 31.034  | (33.523)  |        |         |       |         |

Note. LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

\* Values were not computed since Full Chi-Square was not able to establish five score intervals.

\*\* Values were not computed since parameter estimates from LOGIST5 did not converge.

**Table C-11. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 16A, Subgroup White vs Hispanic**

| Subtest/<br>Index | <u>Random Sample Size</u> |          |        |          |        |         |       |         |
|-------------------|---------------------------|----------|--------|----------|--------|---------|-------|---------|
|                   | N=2000                    |          | N=1000 |          | N=500  |         | N=100 |         |
| <b>GS</b>         |                           |          |        |          |        |         |       |         |
| FCH15             | 19.403                    | (25.778) | 11.073 | (14.039) | 7.889  | (6.169) | *     | (*)     |
| MHC1              | 12.133                    | (21.685) | 6.537  | (11.064) | 2.966  | (3.825) | .924  | (1.386) |
| MHOODS            | 1.100                     | (.551)   | 1.100  | (.553)   | 1.105  | (.503)  | 1.181 | (.836)  |
| LCH1              | 15.507                    | (23.385) | 9.270  | (10.976) |        |         |       |         |
| MSOS              | 40.409                    | (47.583) | 55.141 | (61.861) |        |         |       |         |
| <b>AR</b>         |                           |          |        |          |        |         |       |         |
| FCH15             | 8.115                     | (6.071)  | 6.719  | (6.554)  | 6.256  | (4.545) | *     | (*)     |
| MHC1              | 3.375                     | (4.763)  | 2.378  | (4.077)  | 1.650  | (1.875) | 1.232 | (2.176) |
| MHOODS            | 1.012                     | (.184)   | 1.014  | (.230)   | 1.035  | (.281)  | 1.184 | (.788)  |
| LCH1              | 9.540                     | (9.174)  | 5.562  | (4.458)  |        |         |       |         |
| MSOS              | 24.043                    | (21.954) | 29.611 | (36.159) |        |         |       |         |
| <b>WK</b>         |                           |          |        |          |        |         |       |         |
| FCH15             | 26.789                    | (23.802) | 16.910 | (11.223) | 12.540 | (8.343) | *     | (*)     |
| MHC1              | 17.750                    | (23.033) | 8.125  | (9.810)  | 3.921  | (5.246) | 1.400 | (2.549) |
| MHOODS            | 1.191                     | (.654)   | 1.156  | (.628)   | 1.279  | (.829)  | 1.662 | (2.674) |
| LCH1              | 28.232                    | (28.132) | 13.435 | (13.634) |        |         |       |         |
| MSOS              | 55.288                    | (61.574) | 58.467 | (49.650) |        |         |       |         |
| <b>PC</b>         |                           |          |        |          |        |         |       |         |
| FCH15             | 9.748                     | (9.872)  | 9.860  | (7.174)  | 6.025  | (2.827) | *     | (*)     |
| MHC1              | 5.165                     | (5.613)  | 2.450  | (2.734)  | 1.441  | (1.665) | 1.015 | (1.446) |
| MHOODS            | 1.034                     | (.303)   | 1.020  | (.283)   | 1.034  | (.303)  | 1.134 | (.808)  |
| LCH1              | 16.270                    | (11.125) | 10.605 | (10.433) |        |         |       |         |
| MSOS              | 29.037                    | (29.548) | 62.350 | (83.677) |        |         |       |         |
| <b>AS</b>         |                           |          |        |          |        |         |       |         |
| FCH15             | 17.425                    | (12.651) | 11.920 | (9.641)  | 8.956  | (6.770) | *     | (*)     |
| MHC1              | 8.621                     | (12.896) | 5.141  | (8.557)  | 3.251  | (4.516) | .830  | (1.258) |
| MHOODS            | 1.042                     | (.289)   | 1.061  | (.332)   | 1.088  | (.402)  | 1.124 | (.605)  |
| LCH1              | 29.721                    | (35.796) | 9.609  | (10.097) |        |         |       |         |
| MSOS              | 56.872                    | (60.492) | 65.786 | (79.593) |        |         |       |         |
| <b>MK</b>         |                           |          |        |          |        |         |       |         |
| FCH15             | 10.194                    | (7.293)  | 7.477  | (6.468)  | 7.036  | (5.446) | 3.960 | (.000)  |
| MHC1              | 4.889                     | (6.460)  | 2.211  | (4.942)  | 1.793  | (2.419) | .914  | (1.268) |
| MHOODS            | 1.026                     | (.224)   | 1.026  | (.235)   | 1.032  | (.298)  | 1.111 | (.553)  |
| LCH1              | 8.646                     | (7.020)  | 4.192  | (4.945)  |        |         |       |         |
| MSOS              | 22.589                    | (29.610) | 22.885 | (36.091) |        |         |       |         |
| <b>MC</b>         |                           |          |        |          |        |         |       |         |
| FCH15             | 8.383                     | (5.809)  | 6.880  | (3.871)  | 5.528  | (2.953) | 5.747 | (1.260) |
| MHC1              | 2.793                     | (3.098)  | 1.910  | (1.804)  | 1.214  | (1.437) | .597  | (1.274) |
| MHOODS            | 1.013                     | (.165)   | 1.019  | (.198)   | 1.018  | (.215)  | 1.077 | (.559)  |
| LCH1              | 6.277                     | (5.432)  | 3.781  | (4.284)  |        |         |       |         |
| MSOS              | 14.294                    | (12.609) | 21.199 | (18.166) |        |         |       |         |
| <b>EI</b>         |                           |          |        |          |        |         |       |         |
| FCH15             | 13.844                    | (15.925) | 8.946  | (6.279)  | 6.740  | (4.058) | *     | (*)     |
| MHC1              | 7.559                     | (12.219) | 3.248  | (3.551)  | 2.022  | (3.199) | 1.314 | (1.703) |
| MHOODS            | 1.069                     | (.337)   | 1.056  | (.281)   | 1.068  | (.341)  | 1.189 | (.738)  |
| LCH1              | 10.972                    | (9.045)  | 5.758  | (4.084)  |        |         |       |         |
| MSOS              | 29.658                    | (23.840) | 32.701 | (32.215) |        |         |       |         |

**Note.** LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

\* Values were not computed since Full Chi-Square was not able to establish five score intervals.

**Table C-12. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 16A, Subgroup Male vs Female**

| Subtest/<br>Index | <u>Random Sample Size</u> |           |        |           |        |          |       |         |
|-------------------|---------------------------|-----------|--------|-----------|--------|----------|-------|---------|
|                   | N=2000                    |           | N=1000 |           | N=500  | N=100    |       |         |
| <b>GS</b>         |                           |           |        |           |        |          |       |         |
| FCHI5             | 27.512                    | (53.475)  | 16.839 | (24.853)  | 10.403 | (14.094) | 7.491 | (6.242) |
| MHCHI             | 55.417                    | (81.335)  | 11.132 | (22.184)  | 6.698  | (13.943) | .816  | (1.369) |
| MHOODS            | 1.257                     | (.837)    | 1.072  | (.484)    | 1.097  | (.624)   | 1.114 | (.483)  |
| LCHI              | 28.647                    | (42.622)  | 15.118 | (24.275)  |        |          |       |         |
| MSOS              | 64.215                    | (136.586) | 66.888 | (135.082) |        |          |       |         |
| <b>AR</b>         |                           |           |        |           |        |          |       |         |
| FCHI5             | 13.030                    | (9.563)   | 9.257  | (5.485)   | 7.851  | (4.914)  | 5.709 | (2.904) |
| MHCHI             | 8.350                     | (9.995)   | 4.964  | (5.000)   | 2.196  | (3.027)  | 1.209 | (1.781) |
| MHOODS            | 1.041                     | (.253)    | 1.046  | (.262)    | 1.045  | (.247)   | 1.157 | (.670)  |
| LCHI              | 13.235                    | (14.665)  | 8.715  | (8.137)   |        |          |       |         |
| MSOS              | 25.787                    | (27.874)  | 33.736 | (31.470)  |        |          |       |         |
| <b>WK</b>         |                           |           |        |           |        |          |       |         |
| FCHI5             | 26.580                    | (31.161)  | 16.851 | (17.764)  | 11.153 | (7.950)  | 6.465 | (5.185) |
| MHCHI             | 22.914                    | (33.477)  | 11.755 | (17.548)  | 6.044  | (7.850)  | 1.360 | (2.659) |
| MHOODS            | 1.075                     | (.571)    | 1.109  | (.571)    | 1.104  | (.635)   | 1.178 | (.735)  |
| LCHI              | 35.756                    | (55.598)  | 15.036 | (15.985)  |        |          |       |         |
| MSOS              | 60.605                    | (68.010)  | 65.407 | (75.692)  |        |          |       |         |
| <b>PC</b>         |                           |           |        |           |        |          |       |         |
| FCHI5             | 12.775                    | (14.556)  | 8.118  | (5.811)   | 5.178  | (2.407)  | *     | (*)     |
| MHCHI             | 7.529                     | (11.777)  | 3.536  | (6.072)   | 1.149  | (1.443)  | .883  | (1.369) |
| MHOODS            | 1.003                     | (.308)    | .989   | (.298)    | .999   | (.232)   | 1.352 | (1.018) |
| LCHI              | 13.164                    | (12.048)  | 5.673  | (6.387)   |        |          |       |         |
| MSOS              | 29.170                    | (40.470)  | 29.539 | (35.110)  |        |          |       |         |
| <b>AS</b>         |                           |           |        |           |        |          |       |         |
| FCHI5             | 26.192                    | (29.216)  | 16.390 | (15.611)  | 9.043  | (6.321)  | *     | (*)     |
| MHCHI             | 13.019                    | (17.203)  | 7.468  | (9.926)   | 2.972  | (4.438)  | .822  | (.969)  |
| MHOODS            | 1.062                     | (.354)    | 1.077  | (.399)    | 1.055  | (.343)   | 1.105 | (.496)  |
| LCHI              | 23.625                    | (26.389)  | 13.635 | (15.260)  |        |          |       |         |
| MSOS              | 76.275                    | (85.328)  | 82.803 | (83.372)  |        |          |       |         |
| <b>MK</b>         |                           |           |        |           |        |          |       |         |
| FCHI5             | 23.656                    | (19.627)  | 14.836 | (11.308)  | 9.318  | (7.678)  | 4.650 | (2.671) |
| MHCHI             | 17.391                    | (20.521)  | 9.965  | (10.729)  | 4.652  | (6.861)  | 1.436 | (2.572) |
| MHOODS            | 1.064                     | (.381)    | 1.057  | (.386)    | 1.079  | (.430)   | 1.143 | (.663)  |
| LCHI              | 23.615                    | (19.393)  | 11.843 | (10.755)  |        |          |       |         |
| MSOS              | 43.726                    | (37.901)  | 44.619 | (39.258)  |        |          |       |         |
| <b>MC</b>         |                           |           |        |           |        |          |       |         |
| FCHI5             | 18.588                    | (23.445)  | 10.756 | (11.400)  | 7.074  | (5.702)  | 5.463 | (3.121) |
| MHCHI             | 9.546                     | (16.267)  | 5.320  | (7.497)   | 2.150  | (3.301)  | 1.025 | (1.873) |
| MHOODS            | 1.030                     | (.271)    | 1.038  | (.291)    | 1.032  | (.264)   | 1.096 | (.557)  |
| LCHI              | 15.709                    | (21.524)  | 8.971  | (10.416)  |        |          |       |         |
| MSOS              | 33.576                    | (41.748)  | 41.866 | (59.844)  |        |          |       |         |
| <b>EI</b>         |                           |           |        |           |        |          |       |         |
| FCHI5             | 20.967                    | (25.095)  | 15.217 | (12.076)  | 11.377 | (8.025)  | 9.653 | (5.368) |
| MHCHI             | 11.455                    | (12.508)  | 8.331  | (8.230)   | 4.459  | (4.483)  | 1.177 | (2.356) |
| MHOODS            | 1.027                     | (.291)    | 1.047  | (.344)    | 1.048  | (.376)   | 1.084 | (.468)  |
| LCHI              | 25.910                    | (23.360)  | 15.470 | (16.810)  |        |          |       |         |
| MSOS              | 68.902                    | (71.231)  | 91.358 | (87.998)  |        |          |       |         |

**Note.** LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

\* Values were not computed since Full Chi-Square was not able to establish five score intervals.

**Table C-13. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 16B, Subgroup White vs White**

| Subtest/<br>Index | <u>Random Sample Size</u> |          |        |          |       |         |       |         |
|-------------------|---------------------------|----------|--------|----------|-------|---------|-------|---------|
|                   | N=2000                    |          | N=1000 |          | N=500 |         | N=100 |         |
| <b>GS</b>         |                           |          |        |          |       |         |       |         |
| FCH15             | 3.846                     | (2.161)  | 3.966  | (2.383)  | 4.812 | (3.538) | 5.385 | (2.020) |
| MHCHI             | .678                      | (1.028)  | .779   | (.788)   | .658  | (.931)  | .453  | (.586)  |
| MHOODS            | 1.008                     | (.081)   | .999   | (.124)   | 1.028 | (.192)  | 1.018 | (.359)  |
| LCHI              | 15.987                    | (17.551) | 8.907  | (8.690)  |       |         |       |         |
| MSOS              | 10.160                    | (17.823) | 15.672 | (17.364) |       |         |       |         |
| <b>AR</b>         |                           |          |        |          |       |         |       |         |
| FCH15             | 3.698                     | (2.520)  | 3.467  | (2.456)  | 4.934 | (3.381) | 4.205 | (2.680) |
| MHCHI             | .854                      | (1.122)  | .634   | (.957)   | .621  | (1.053) | .820  | (1.431) |
| MHOODS            | 1.002                     | (.078)   | 1.015  | (.107)   | 1.061 | (.272)  | 1.215 | (1.028) |
| LCHI              | 21.278                    | (26.514) | 12.598 | (12.675) |       |         |       |         |
| MSOS              | 28.246                    | (32.053) | 32.322 | (35.153) |       |         |       |         |
| <b>WK</b>         |                           |          |        |          |       |         |       |         |
| FCH15             | 3.950                     | (2.202)  | 5.279  | (3.823)  | 3.950 | (2.181) | 3.784 | (2.823) |
| MHCHI             | .500                      | (.612)   | 1.638  | (3.001)  | .746  | (1.105) | .674  | (.928)  |
| MHOODS            | 1.015                     | (.118)   | .987   | (.264)   | 1.038 | (.355)  | 1.247 | (.958)  |
| LCHI              | 10.390                    | (9.900)  | 7.593  | (7.845)  |       |         |       |         |
| MSOS              | 16.301                    | (21.334) | 17.071 | (19.228) |       |         |       |         |
| <b>PC</b>         |                           |          |        |          |       |         |       |         |
| FCH15             | 4.055                     | (2.072)  | 4.332  | (3.273)  | 4.491 | (2.883) | *     | (*)     |
| MHCHI             | .641                      | (.913)   | 1.006  | (1.420)  | .978  | (1.042) | .878  | (1.092) |
| MHOODS            | 1.011                     | (.080)   | 1.005  | (.167)   | 1.090 | (.302)  | 1.295 | (.859)  |
| LCHI              | 26.261                    | (23.319) | 16.694 | (13.792) |       |         |       |         |
| MSOS              | 29.697                    | (32.023) | 44.192 | (34.399) |       |         |       |         |
| <b>AS</b>         |                           |          |        |          |       |         |       |         |
| FCH15             | 5.252                     | (3.124)  | 4.441  | (1.951)  | 4.403 | (2.600) | 5.449 | (2.726) |
| MHCHI             | .714                      | (1.172)  | .831   | (1.143)  | .878  | (.908)  | .771  | (.965)  |
| MHOODS            | .997                      | (.073)   | 1.003  | (.109)   | 1.009 | (.169)  | 1.097 | (.450)  |
| LCHI              | 19.783                    | (28.446) | 12.623 | (15.217) |       |         |       |         |
| MSOS              | 16.144                    | (21.260) | 21.262 | (20.137) |       |         |       |         |
| <b>MK</b>         |                           |          |        |          |       |         |       |         |
| FCH15             | 3.511                     | (2.139)  | 3.928  | (2.054)  | 5.201 | (3.767) | 4.279 | (2.610) |
| MHCHI             | .585                      | (.643)   | .463   | (1.102)  | 1.147 | (1.836) | .577  | (.713)  |
| MHOODS            | 1.002                     | (.065)   | 1.003  | (.079)   | 1.010 | (.192)  | 1.091 | (.411)  |
| LCHI              | 22.533                    | (23.744) | 11.268 | (11.440) |       |         |       |         |
| MSOS              | 43.376                    | (79.362) | 46.429 | (78.336) |       |         |       |         |
| <b>MC</b>         |                           |          |        |          |       |         |       |         |
| FCH15             | 4.789                     | (3.331)  | 4.756  | (2.980)  | 5.967 | (3.255) | 4.593 | (2.726) |
| MHCHI             | 1.111                     | (1.472)  | .841   | (1.575)  | .669  | (.653)  | .888  | (1.125) |
| MHOODS            | .991                      | (.086)   | 1.002  | (.111)   | 1.005 | (.144)  | 1.087 | (.507)  |
| LCHI              | 34.121                    | (30.255) | 20.848 | (18.012) |       |         |       |         |
| MSOS              | 32.280                    | (18.087) | 28.053 | (23.242) |       |         |       |         |
| <b>EI</b>         |                           |          |        |          |       |         |       |         |
| FCH15             | 3.252                     | (1.398)  | 4.087  | (1.949)  | 4.536 | (3.787) | 5.372 | (3.669) |
| MHCHI             | .329                      | (.602)   | .815   | (1.119)  | .352  | (.425)  | .928  | (1.390) |
| MHOODS            | .997                      | (.052)   | .994   | (.113)   | 1.009 | (.119)  | 1.407 | (1.703) |
| LCHI              | 21.027                    | (27.768) | 13.844 | (16.122) |       |         |       |         |
| MSOS              | 15.830                    | (18.457) | 20.698 | (17.857) |       |         |       |         |

**Note.** LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

\* Values were not computed since Full Chi-Square was not able to establish five score intervals.

**Table C-14. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 16B, Subgroup White vs Black**

| Subtest/<br>Index | Random Sample Size |           |        |           |        |          |       |         |
|-------------------|--------------------|-----------|--------|-----------|--------|----------|-------|---------|
|                   | N=2000             |           | N=1000 |           | N=500  |          | N=100 |         |
| <b>GS</b>         |                    |           |        |           |        |          |       |         |
| FCH15             | 23.008             | (33.339)  | 15.870 | (17.614)  | 10.156 | (8.007)  | *     | (*)     |
| MHCHI             | 14.256             | (24.759)  | 9.465  | (14.373)  | 4.160  | (5.871)  | 1.237 | (2.145) |
| MHOODS            | 1.079              | (.482)    | 1.083  | (.502)    | 1.090  | (.457)   | 1.223 | (.865)  |
| LCHI              | 22.310             | (25.662)  | 13.757 | (14.752)  |        |          |       |         |
| MSOS              | 43.151             | (58.726)  | 63.578 | (71.315)  |        |          |       |         |
| <b>AR</b>         |                    |           |        |           |        |          |       |         |
| FCH15             | 16.020             | (15.069)  | 11.003 | (9.367)   | 9.045  | (5.492)  | 7.563 | (3.714) |
| MHCHI             | 8.567              | (10.794)  | 4.595  | (6.722)   | 2.503  | (3.431)  | .387  | (.805)  |
| MHOODS            | 1.016              | (.273)    | 1.027  | (.297)    | 1.068  | (.365)   | 1.221 | (1.094) |
| LCHI              | 19.545             | (15.906)  | 12.470 | (10.271)  |        |          |       |         |
| MSOS              | 34.117             | (35.901)  | 48.187 | (61.037)  |        |          |       |         |
| <b>WK</b>         |                    |           |        |           |        |          |       |         |
| FCH15             | 26.432             | (54.691)  | 15.113 | (25.473)  | 11.705 | (16.076) | *     | (*)     |
| MHCHI             | 15.718             | (41.640)  | 8.307  | (20.582)  | 5.019  | (12.123) | .910  | (1.316) |
| MHOODS            | 1.042              | (.461)    | 1.032  | (.482)    | 1.041  | (.608)   | 1.034 | (.667)  |
| LCHI              | 48.683             | (47.137)  | 21.166 | (20.707)  |        |          |       |         |
| MSOS              | 49.106             | (117.819) | 51.833 | (116.884) |        |          |       |         |
| <b>PC</b>         |                    |           |        |           |        |          |       |         |
| FCH15             | 15.073             | (12.978)  | 8.350  | (4.818)   | 6.301  | (3.644)  | *     | (*)     |
| MHCHI             | 8.264              | (16.181)  | 3.003  | (5.893)   | 2.946  | (3.836)  | .744  | (.982)  |
| MHOODS            | 1.051              | (.285)    | 1.037  | (.248)    | 1.125  | (.418)   | 1.228 | (.721)  |
| LCHI              | 18.079             | (18.162)  | 7.795  | (8.101)   |        |          |       |         |
| MSOS              | 31.721             | (40.922)  | 28.840 | (28.483)  |        |          |       |         |
| <b>AS</b>         |                    |           |        |           |        |          |       |         |
| FCH15             | 21.856             | (17.872)  | 11.308 | (8.677)   | 9.525  | (7.079)  | *     | (*)     |
| MHCHI             | 11.489             | (13.554)  | 4.982  | (6.804)   | 3.245  | (5.292)  | 1.131 | (1.973) |
| MHOODS            | 1.051              | (.350)    | 1.043  | (.312)    | 1.056  | (.350)   | 1.175 | (.752)  |
| LCHI              | 21.169             | (25.361)  | 11.858 | (14.631)  |        |          |       |         |
| MSOS              | 69.431             | (67.690)  | 72.711 | (91.519)  |        |          |       |         |
| <b>MK</b>         |                    |           |        |           |        |          |       |         |
| FCH15             | 23.156             | (30.260)  | 15.670 | (15.828)  | 10.702 | (10.588) | 8.630 | (2.990) |
| MHCHI             | 16.120             | (25.564)  | 8.467  | (12.333)  | 5.242  | (8.457)  | 1.191 | (1.818) |
| MHOODS            | 1.052              | (.380)    | 1.058  | (.396)    | 1.081  | (.491)   | 1.134 | (.616)  |
| LCHI              | 26.340             | (26.621)  | 14.277 | (13.936)  |        |          |       |         |
| MSOS              | 53.854             | (74.018)  | 61.373 | (83.711)  |        |          |       |         |
| <b>MC</b>         |                    |           |        |           |        |          |       |         |
| FCH15             | 12.762             | (13.123)  | 9.329  | (6.943)   | 7.706  | (4.770)  | *     | (*)     |
| MHCHI             | 4.908              | (5.308)   | 2.586  | (3.751)   | 2.279  | (2.720)  | .895  | (2.713) |
| MHOODS            | 1.016              | (.189)    | 1.021  | (.197)    | 1.039  | (.277)   | 1.151 | (.845)  |
| LCHI              | 9.683              | (8.007)   | 6.283  | (5.010)   |        |          |       |         |
| MSOS              | 24.566             | (24.615)  | 30.073 | (29.995)  |        |          |       |         |
| <b>EI</b>         |                    |           |        |           |        |          |       |         |
| FCH15             | 20.420             | (28.454)  | 13.596 | (10.468)  | 9.096  | (8.090)  | *     | (*)     |
| MHCHI             | 12.542             | (20.262)  | 6.992  | (7.479)   | 3.140  | (4.051)  | 1.553 | (2.907) |
| MHOODS            | 1.069              | (.341)    | 1.082  | (.371)    | 1.097  | (.418)   | 1.702 | (3.003) |
| LCHI              | 14.447             | (19.117)  | 12.889 | (13.898)  |        |          |       |         |
| MSOS              | 34.222             | (49.053)  | 42.726 | (45.928)  |        |          |       |         |

**Note.** LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

\* Values were not computed since Full Chi-Square was not able to establish five score intervals.

**Table C-15. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 16B, Subgroup White vs Hispanic**

| Subtest/<br>Index | <u>Random Sample Size</u> |          |         |           |        |          |       |         |
|-------------------|---------------------------|----------|---------|-----------|--------|----------|-------|---------|
|                   | N=2000                    |          | N=1000  |           | N=500  |          | N=100 |         |
| <b>GS</b>         |                           |          |         |           |        |          |       |         |
| FCHIS             | 18.991                    | (23.114) | 13.260  | (12.133)  | 9.701  | (7.605)  | *     | ( * )   |
| MHCHI             | 13.601                    | (19.676) | 7.727   | (9.760)   | 3.796  | (4.991)  | .964  | (1.297) |
| MHOODS            | 1.109                     | (.530)   | 1.103   | (.494)    | 1.125  | (.541)   | 1.278 | (.956)  |
| LCHI              | 16.336                    | (16.098) | 11.648  | (11.717)  |        |          |       |         |
| MSOS              | 53.096                    | (58.832) | 72.670  | (78.231)  |        |          |       |         |
| <b>AR</b>         |                           |          |         |           |        |          |       |         |
| FCHIS             | 8.677                     | (5.128)  | 6.357   | (4.079)   | 6.487  | (4.060)  | 4.663 | (.000)  |
| MHCHI             | 2.951                     | (3.661)  | 2.071   | (2.198)   | .630   | (1.075)  | 1.145 | (1.672) |
| MHOODS            | 1.004                     | (.178)   | 1.023   | (.216)    | 1.024  | (.168)   | 1.185 | (.836)  |
| LCHI              | 10.743                    | (7.898)  | 4.614   | (3.943)   |        |          |       |         |
| MSOS              | 17.650                    | (16.546) | 26.189  | (21.610)  |        |          |       |         |
| <b>WK</b>         |                           |          |         |           |        |          |       |         |
| FCHIS             | 25.839                    | (32.732) | 17.165  | (19.244)  | 11.016 | (10.599) | *     | ( * )   |
| MHCHI             | 15.261                    | (25.827) | 9.568   | (15.239)  | 4.714  | (7.236)  | 1.008 | (1.315) |
| MHOODS            | 1.317                     | (1.017)  | 1.309   | (1.005)   | 1.271  | (.743)   | 1.466 | (1.733) |
| LCHI              | 44.126                    | (36.945) | 19.134  | (17.632)  |        |          |       |         |
| MSOS              | 57.039                    | (88.624) | 81.444  | (111.287) |        |          |       |         |
| <b>PC</b>         |                           |          |         |           |        |          |       |         |
| FCHIS             | 11.925                    | (8.862)  | 7.966   | (6.757)   | 7.055  | (5.582)  | *     | ( * )   |
| MHCHI             | 5.124                     | (6.590)  | 1.662   | (2.253)   | 3.752  | (5.709)  | .589  | (1.312) |
| MHOODS            | 1.072                     | (.304)   | 1.049   | (.256)    | 1.268  | (.757)   | 1.218 | (.939)  |
| LCHI              | 16.740                    | (19.510) | 7.250   | (6.922)   |        |          |       |         |
| MSOS              | 22.067                    | (21.667) | 28.579  | (36.441)  |        |          |       |         |
| <b>AS</b>         |                           |          |         |           |        |          |       |         |
| FCHIS             | 16.221                    | (11.237) | 10.339  | (6.374)   | 7.469  | (5.025)  | *     | ( * )   |
| MHCHI             | 6.970                     | (10.228) | 3.618   | (5.805)   | 2.293  | (4.716)  | 1.220 | (1.823) |
| MHOODS            | 1.034                     | (.250)   | 1.032   | (.255)    | 1.039  | (.288)   | 1.220 | (.926)  |
| LCHI              | 19.905                    | (31.619) | 13.739  | (24.335)  |        |          |       |         |
| MSOS              | 54.237                    | (57.434) | 70.602  | (79.474)  |        |          |       |         |
| <b>MK</b>         |                           |          |         |           |        |          |       |         |
| FCHIS             | 9.356                     | (7.906)  | 6.442   | (6.322)   | 5.733  | (2.909)  | *     | ( * )   |
| MHCHI             | 3.570                     | (4.783)  | 2.030   | (3.046)   | 1.676  | (2.436)  | .494  | (.585)  |
| MHOODS            | 1.011                     | (.193)   | 1.014   | (.207)    | 1.027  | (.283)   | 1.112 | (.446)  |
| LCHI              | 9.926                     | (8.276)  | 5.900   | (5.633)   |        |          |       |         |
| MSOS              | 21.478                    | (26.984) | 29.630  | (37.617)  |        |          |       |         |
| <b>MC</b>         |                           |          |         |           |        |          |       |         |
| FCHIS             | 9.488                     | (6.576)  | 7.798   | (5.419)   | 6.051  | (3.563)  | 6.508 | (3.725) |
| MHCHI             | 2.882                     | (3.642)  | 1.844   | (3.003)   | 1.153  | (2.091)  | .912  | (1.687) |
| MHOODS            | 1.005                     | (.165)   | 1.015   | (.188)    | 1.022  | (.206)   | 1.124 | (.635)  |
| LCHI              | 9.290                     | (7.474)  | 11.512  | (8.248)   |        |          |       |         |
| MSOS              | 24.787                    | (21.620) | 371.480 | (174.063) |        |          |       |         |
| <b>EI</b>         |                           |          |         |           |        |          |       |         |
| FCHIS             | 12.225                    | (14.234) | 10.890  | (6.833)   | 6.976  | (5.742)  | *     | ( * )   |
| MHCHI             | 8.358                     | (10.945) | 4.755   | (5.609)   | 1.492  | (2.721)  | .389  | (.507)  |
| MHOODS            | 1.067                     | (.335)   | 1.072   | (.357)    | 1.062  | (.311)   | 1.250 | (.935)  |
| LCHI              | 9.007                     | (11.247) | 8.796   | (8.772)   |        |          |       |         |
| MSOS              | 23.357                    | (22.928) | 44.104  | (43.816)  |        |          |       |         |

**Note.** LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

\* Values were not computed since Full Chi-Square was not able to establish five score intervals.

**Table C-16. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 16B, Subgroup Male vs Female**

| Subtest/<br>Index | <u>Random Sample Size</u> |           |        |           |        |          |       |         |
|-------------------|---------------------------|-----------|--------|-----------|--------|----------|-------|---------|
|                   | N=2000                    |           | N=1000 |           | N=500  |          | N=100 |         |
| <b>GS</b>         |                           |           |        |           |        |          |       |         |
| FCH15             | 28.997                    | (57.660)  | 19.228 | (29.203)  | 10.947 | (15.229) | 6.808 | (5.374) |
| MHCHI             | 24.094                    | (52.249)  | 13.191 | (25.136)  | 7.025  | (12.537) | 2.053 | (3.393) |
| MHOODS            | 1.071                     | (.557)    | 1.083  | (.572)    | 1.072  | (.561)   | 1.200 | (.876)  |
| LCHI              | 40.055                    | (42.129)  | 17.027 | (23.004)  |        |          |       |         |
| MSOS              | 59.468                    | (121.080) | 66.712 | (111.479) |        |          |       |         |
| <b>AR</b>         |                           |           |        |           |        |          |       |         |
| FCH15             | 16.368                    | (16.176)  | 10.480 | (9.118)   | 6.938  | (4.976)  | 6.801 | (3.309) |
| MHCHI             | 11.872                    | (14.548)  | 5.464  | (6.938)   | 2.753  | (3.437)  | 1.035 | (1.362) |
| MHOODS            | 1.032                     | (.318)    | 1.030  | (.314)    | 1.041  | (.307)   | 1.128 | (.539)  |
| LCHI              | 15.566                    | (17.858)  | 8.439  | (8.885)   |        |          |       |         |
| MSOS              | 31.283                    | (35.590)  | 34.594 | (40.870)  |        |          |       |         |
| <b>WK</b>         |                           |           |        |           |        |          |       |         |
| FCH15             | 23.419                    | (31.669)  | 15.789 | (17.689)  | 10.211 | (7.804)  | 9.082 | (4.453) |
| MHCHI             | 18.996                    | (31.858)  | 9.714  | (16.367)  | 4.260  | (6.026)  | 1.410 | (2.441) |
| MHOODS            | 1.058                     | (.426)    | 1.041  | (.441)    | 1.076  | (.485)   | 1.182 | (.960)  |
| LCHI              | 45.519                    | (61.726)  | 23.873 | (28.418)  |        |          |       |         |
| MSOS              | 52.225                    | (83.760)  | 53.423 | (88.059)  |        |          |       |         |
| <b>PC</b>         |                           |           |        |           |        |          |       |         |
| FCH15             | 11.470                    | (7.123)   | 9.516  | (5.596)   | 7.386  | (4.788)  | 7.229 | (8.330) |
| MHCHI             | 6.396                     | (8.408)   | 4.386  | (5.362)   | 2.379  | (2.724)  | 1.020 | (1.910) |
| MHOODS            | 1.019                     | (.248)    | 1.010  | (.322)    | 1.077  | (.350)   | 1.125 | (.615)  |
| LCHI              | 10.630                    | (9.908)   | 9.807  | (9.584)   |        |          |       |         |
| MSOS              | 19.035                    | (19.717)  | 33.459 | (34.175)  |        |          |       |         |
| <b>AS</b>         |                           |           |        |           |        |          |       |         |
| FCH15             | 23.547                    | (24.743)  | 14.315 | (12.130)  | 11.297 | (9.498)  | *     | ( * )   |
| MHCHI             | 12.329                    | (14.719)  | 5.337  | (6.443)   | 3.290  | (4.087)  | 1.217 | (1.566) |
| MHOODS            | 1.053                     | (.334)    | 1.049  | (.290)    | 1.064  | (.368)   | 1.164 | (.716)  |
| LCHI              | 24.372                    | (22.850)  | 12.569 | (11.467)  |        |          |       |         |
| MSOS              | 69.935                    | (76.517)  | 85.998 | (86.064)  |        |          |       |         |
| <b>MK</b>         |                           |           |        |           |        |          |       |         |
| FCH15             | 20.832                    | (17.738)  | 14.510 | (15.019)  | 9.446  | (6.968)  | 5.148 | (2.411) |
| MHCHI             | 16.196                    | (17.517)  | 9.005  | (13.074)  | 4.732  | (4.863)  | .798  | (1.348) |
| MHOODS            | 1.050                     | (.359)    | 1.058  | (.420)    | 1.047  | (.368)   | 1.082 | (.482)  |
| LCHI              | 20.501                    | (15.734)  | 11.795 | (9.599)   |        |          |       |         |
| MSOS              | 41.039                    | (41.683)  | 45.183 | (49.403)  |        |          |       |         |
| <b>MC</b>         |                           |           |        |           |        |          |       |         |
| FCH15             | 16.683                    | (18.888)  | 9.278  | (11.080)  | 8.273  | (6.672)  | 6.203 | (4.363) |
| MHCHI             | 9.645                     | (15.137)  | 4.285  | (8.388)   | 3.177  | (4.852)  | 1.286 | (2.287) |
| MHOODS            | 1.036                     | (.266)    | 1.026  | (.254)    | 1.045  | (.304)   | 1.100 | (.485)  |
| LCHI              | 16.529                    | (23.261)  | 8.299  | (9.655)   |        |          |       |         |
| MSOS              | 33.596                    | (43.048)  | 31.392 | (40.592)  |        |          |       |         |
| <b>EI</b>         |                           |           |        |           |        |          |       |         |
| FCH15             | 18.000                    | (18.328)  | 12.914 | (8.836)   | 10.238 | (6.811)  | *     | ( * )   |
| MHCHI             | 9.793                     | (9.631)   | 5.920  | (4.946)   | 4.643  | (4.546)  | .986  | (2.144) |
| MHOODS            | 1.020                     | (.276)    | 1.032  | (.294)    | 1.055  | (.385)   | 1.066 | (.414)  |
| LCHI              | 17.558                    | (16.450)  | 13.401 | (13.005)  |        |          |       |         |
| MSOS              | 49.395                    | (53.559)  | 68.274 | (82.359)  |        |          |       |         |

**Note.** LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

\* Values were not computed since Full Chi-Square was not able to establish five score intervals.

**Table C-17. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 17A, Subgroup White vs White**

| Subtest/<br>Index | <u>Random Sample Size</u> |          |        |          |       |         |       |
|-------------------|---------------------------|----------|--------|----------|-------|---------|-------|
|                   | N=2000                    | N=1000   |        | N=500    | N=100 |         |       |
| <b>GS</b>         |                           |          |        |          |       |         |       |
| FCH15             | 3.639                     | (1.954)  | 4.586  | (2.707)  | 5.056 | (2.882) | 6.099 |
| MHCHI             | .479                      | (.774)   | .884   | (1.283)  | .755  | (1.181) | .502  |
| MHOODS            | 1.008                     | (.064)   | 1.013  | (.121)   | .999  | (.165)  | 1.075 |
| LCHI              | 34.767                    | (32.291) | 9.817  | (10.755) |       |         |       |
| MSOS              | 12.789                    | (20.164) | 18.634 | (23.496) |       |         |       |
| <b>AR</b>         |                           |          |        |          |       |         |       |
| FCH15             | 3.671                     | (1.878)  | 4.870  | (3.049)  | 4.130 | (2.096) | 5.247 |
| MHCHI             | .473                      | (.723)   | .743   | (1.025)  | .551  | (.680)  | .408  |
| MHOODS            | 1.010                     | (.079)   | 1.007  | (.120)   | .979  | (.193)  | .979  |
| LCHI              | 26.179                    | (24.944) | 11.264 | (12.564) |       |         |       |
| MSOS              | 23.305                    | (22.868) | 30.748 | (26.486) |       |         |       |
| <b>WK</b>         |                           |          |        |          |       |         |       |
| FCH15             | 3.895                     | (2.493)  | 4.278  | (3.098)  | 4.826 | (2.492) | 4.170 |
| MHCHI             | .571                      | (.872)   | .635   | (1.333)  | .540  | (.773)  | .899  |
| MHOODS            | 1.004                     | (.116)   | .996   | (.135)   | 1.029 | (.242)  | 1.008 |
| LCHI              | 11.586                    | (13.741) | 7.108  | (7.100)  |       |         |       |
| MSOS              | 14.747                    | (25.425) | 17.743 | (23.856) |       |         |       |
| <b>PC</b>         |                           |          |        |          |       |         |       |
| FCH15             | 3.278                     | (2.079)  | 3.488  | (2.407)  | 4.920 | (2.697) | *     |
| MHCHI             | .463                      | (.734)   | .634   | (.936)   | .532  | (.768)  | 1.291 |
| MHOODS            | 1.004                     | (.087)   | 1.019  | (.131)   | 1.011 | (.166)  | 1.212 |
| LCHI              | 37.553                    | (43.592) | 17.363 | (13.099) |       |         |       |
| MSOS              | 36.524                    | (35.791) | 38.781 | (48.044) |       |         |       |
| <b>AS</b>         |                           |          |        |          |       |         |       |
| FCH15             | 4.278                     | (3.157)  | 3.554  | (2.460)  | 3.098 | (1.983) | 4.968 |
| MHCHI             | .699                      | (.842)   | .560   | (.639)   | .519  | (.780)  | .404  |
| MHOODS            | 1.000                     | (.075)   | 1.002  | (.091)   | 1.049 | (.294)  | 1.036 |
| LCHI              | 24.549                    | (25.406) | 12.763 | (12.600) |       |         |       |
| MSOS              | 16.230                    | (17.080) | 29.016 | (20.653) |       |         |       |
| <b>MK</b>         |                           |          |        |          |       |         |       |
| FCH15             | 2.907                     | (1.666)  | 4.692  | (2.602)  | 4.780 | (2.764) | 5.148 |
| MHCHI             | .441                      | (.692)   | 1.072  | (1.317)  | .674  | (.966)  | .794  |
| MHOODS            | 1.001                     | (.057)   | 1.019  | (.145)   | 1.016 | (.155)  | 1.078 |
| LCHI              | 21.750                    | (32.201) | 16.981 | (21.260) |       |         |       |
| MSOS              | 39.205                    | (52.058) | 42.781 | (52.435) |       |         |       |
| <b>MC</b>         |                           |          |        |          |       |         |       |
| FCH15             | 4.181                     | (2.530)  | 3.505  | (2.310)  | 4.011 | (2.456) | 5.635 |
| MHCHI             | 1.153                     | (1.436)  | .692   | (1.126)  | .625  | (.820)  | .352  |
| MHOODS            | 1.003                     | (.094)   | 1.003  | (.103)   | 1.005 | (.136)  | 1.045 |
| LCHI              | 18.860                    | (26.025) | 10.290 | (12.135) |       |         |       |
| MSOS              | 13.935                    | (14.382) | 19.129 | (16.676) |       |         |       |
| <b>EI</b>         |                           |          |        |          |       |         |       |
| FCH15             | 3.766                     | (2.496)  | 5.795  | (3.500)  | 4.118 | (2.018) | 5.731 |
| MHCHI             | .706                      | (1.520)  | .779   | (1.332)  | .768  | (.822)  | 1.010 |
| MHOODS            | 1.000                     | (.071)   | .999   | (.103)   | 1.023 | (.168)  | 1.179 |
| LCHI              | 22.761                    | (23.115) | 15.423 | (16.667) |       |         |       |
| MSOS              | 14.835                    | (14.314) | 20.431 | (16.172) |       |         |       |

**Note.** LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

\* Values were not computed since Full Chi-Square was not able to establish five score intervals.

**Table C-18. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 17A, Subgroup White vs Black**

| Subtest/<br>Index | <u>Random Sample Size</u> |           |         |           |       |         |       |         |
|-------------------|---------------------------|-----------|---------|-----------|-------|---------|-------|---------|
|                   | N=2000                    |           | N=1000  |           | N=500 |         | N=100 |         |
| <b>GS</b>         |                           |           |         |           |       |         |       |         |
| FCH15             | 18.363                    | (20.178)  | 14.576  | (13.545)  | 7.830 | (6.467) | 5.018 | (3.184) |
| MHCHI             | 9.257                     | (15.156)  | 7.509   | (10.604)  | 3.375 | (4.921) | 1.006 | (1.258) |
| MHOODS            | 1.051                     | (.306)    | 1.083   | (.403)    | 1.058 | (.402)  | 1.106 | (.476)  |
| LCHI              | 24.411                    | (21.833)  | 8.203   | (6.962)   |       |         |       |         |
| MSOS              | 93.704                    | (126.239) | 121.157 | (151.427) |       |         |       |         |
| <b>AR</b>         |                           |           |         |           |       |         |       |         |
| FCH15             | 14.853                    | (13.035)  | 9.017   | (8.248)   | 8.748 | (5.378) | 6.660 | (5.013) |
| MHCHI             | 6.006                     | (9.075)   | 3.442   | (6.324)   | 1.799 | (2.036) | 1.005 | (1.297) |
| MHOODS            | 1.023                     | (.216)    | 1.008   | (.277)    | 1.008 | (.276)  | 1.048 | (.546)  |
| LCHI              | 14.161                    | (12.117)  | 5.674   | (5.607)   |       |         |       |         |
| MSOS              | 20.066                    | (19.967)  | 24.653  | (37.380)  |       |         |       |         |
| <b>WK</b>         |                           |           |         |           |       |         |       |         |
| FCH15             | 21.782                    | (24.150)  | 15.425  | (14.239)  | 9.575 | (6.297) | 5.616 | (.000)  |
| MHCHI             | 13.146                    | (18.208)  | 8.638   | (11.264)  | 3.764 | (5.444) | 1.078 | (1.294) |
| MHOODS            | 1.075                     | (.422)    | 1.073   | (.495)    | 1.054 | (.503)  | 1.098 | (.770)  |
| LCHI              | 20.801                    | (29.193)  | 13.260  | (16.268)  |       |         |       |         |
| MSOS              | 38.346                    | (45.618)  | 46.529  | (58.616)  |       |         |       |         |
| <b>PC</b>         |                           |           |         |           |       |         |       |         |
| FCH15             | 14.030                    | (8.616)   | 11.281  | (8.642)   | 6.229 | (3.548) | *     | (*)     |
| MHCHI             | 7.126                     | (7.310)   | 5.009   | (6.977)   | 2.197 | (3.043) | 1.736 | (2.721) |
| MHOODS            | 1.002                     | (.260)    | 1.019   | (.315)    | 1.053 | (.371)  | 1.202 | (.904)  |
| LCHI              | 12.528                    | (15.157)  | 13.043  | (12.496)  |       |         |       |         |
| MSOS              | 37.984                    | (64.857)  | 42.709  | (37.744)  |       |         |       |         |
| <b>AS</b>         |                           |           |         |           |       |         |       |         |
| FCH15             | 22.016                    | (28.300)  | 11.322  | (11.973)  | 9.116 | (8.060) | *     | (*)     |
| MHCHI             | 11.617                    | (22.354)  | 4.902   | (9.001)   | 2.297 | (3.725) | 1.869 | (3.469) |
| MHOODS            | 1.050                     | (.387)    | 1.040   | (.341)    | 1.072 | (.331)  | 1.299 | (1.357) |
| LCHI              | 24.698                    | (25.232)  | 14.826  | (10.791)  |       |         |       |         |
| MSOS              | 65.776                    | (93.365)  | 57.224  | (68.289)  |       |         |       |         |
| <b>MK</b>         |                           |           |         |           |       |         |       |         |
| FCH15             | 18.589                    | (17.681)  | 9.042   | (6.559)   | 9.723 | (5.339) | 7.717 | (3.671) |
| MHCHI             | 11.393                    | (15.601)  | 4.507   | (5.917)   | 4.314 | (4.834) | 2.089 | (2.603) |
| MHOODS            | 1.022                     | (.274)    | 1.022   | (.256)    | 1.054 | (.361)  | 1.139 | (.660)  |
| LCHI              | 20.153                    | (22.982)  | 7.473   | (7.415)   |       |         |       |         |
| MSOS              | 36.979                    | (38.641)  | 30.767  | (32.777)  |       |         |       |         |
| <b>MC</b>         |                           |           |         |           |       |         |       |         |
| FCH15             | 13.150                    | (11.163)  | 10.420  | (5.819)   | 6.903 | (4.857) | 5.230 | (.979)  |
| MHCHI             | 5.050                     | (7.310)   | 5.153   | (5.098)   | 2.291 | (3.166) | 1.309 | (1.696) |
| MHOODS            | 1.031                     | (.201)    | 1.061   | (.300)    | 1.048 | (.313)  | 1.152 | (.663)  |
| LCHI              | 9.787                     | (7.270)   | 6.640   | (5.290)   |       |         |       |         |
| MSOS              | 28.040                    | (35.969)  | 41.028  | (42.938)  |       |         |       |         |
| <b>EI</b>         |                           |           |         |           |       |         |       |         |
| FCH15             | 15.819                    | (9.904)   | 10.009  | (6.672)   | 9.331 | (5.505) | *     | (*)     |
| MHCHI             | 8.116                     | (7.946)   | 4.328   | (4.765)   | 3.526 | (3.173) | .721  | (.920)  |
| MHOODS            | 1.058                     | (.268)    | 1.055   | (.259)    | 1.086 | (.374)  | 1.198 | (.662)  |
| LCHI              | 19.461                    | (14.102)  | 11.342  | (7.701)   |       |         |       |         |
| MSOS              | 32.367                    | (30.149)  | 33.331  | (39.931)  |       |         |       |         |

**Note.** LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

\* Values were not computed since Full Chi-Square was not able to establish five score intervals.

**Table C-19. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 17A, Subgroup White vs Hispanic**

| Subtest/<br>Index | <u>Random Sample Size</u> |           |        |           |        |          |       |         |
|-------------------|---------------------------|-----------|--------|-----------|--------|----------|-------|---------|
|                   | N=2000                    |           | N=1000 |           | N=500  |          | N=100 |         |
| <b>GS</b>         |                           |           |        |           |        |          |       |         |
| FCHIS             | 17.796                    | (33.875)  | 11.653 | (17.994)  | 7.383  | (9.979)  | *     | (*)     |
| MHCHI             | 11.051                    | (29.566)  | 6.081  | (15.392)  | 2.564  | (6.637)  | 1.097 | (1.435) |
| MHOODS            | 1.061                     | (.465)    | 1.078  | (.478)    | 1.063  | (.458)   | 1.179 | (.709)  |
| LCHI              | 13.503                    | (18.763)  | 7.178  | (7.826)   |        |          |       |         |
| MSOS              | 43.813                    | (110.719) | 44.420 | (105.462) |        |          |       |         |
| <b>AR</b>         |                           |           |        |           |        |          |       |         |
| FCHIS             | 8.847                     | (6.541)   | 5.953  | (2.953)   | 6.094  | (3.263)  | *     | (*)     |
| MHCHI             | 3.901                     | (5.621)   | 1.618  | (1.883)   | 1.155  | (1.460)  | .537  | (.831)  |
| MHOODS            | 1.012                     | (.171)    | 1.018  | (.179)    | 1.010  | (.235)   | 1.041 | (.485)  |
| LCHI              | 7.969                     | (7.102)   | 3.955  | (3.937)   |        |          |       |         |
| MSOS              | 14.707                    | (12.905)  | 21.155 | (19.111)  |        |          |       |         |
| <b>WK</b>         |                           |           |        |           |        |          |       |         |
| FCHIS             | 21.014                    | (27.525)  | 12.632 | (14.255)  | 8.730  | (6.764)  | *     | (*)     |
| MHCHI             | 12.730                    | (21.629)  | 6.272  | (10.356)  | 2.871  | (4.672)  | 1.044 | (1.149) |
| MHOODS            | 1.234                     | (.804)    | 1.197  | (.701)    | 1.278  | (.816)   | 1.469 | (1.559) |
| LCHI              | 16.451                    | (23.523)  | 10.255 | (12.775)  |        |          |       |         |
| MSOS              | 41.057                    | (48.490)  | 48.974 | (48.977)  |        |          |       |         |
| <b>PC</b>         |                           |           |        |           |        |          |       |         |
| FCHIS             | 8.427                     | (4.215)   | 7.935  | (4.296)   | 5.176  | (2.957)  | *     | (*)     |
| MHCHI             | 2.033                     | (2.590)   | 2.526  | (2.730)   | .843   | (.836)   | 1.386 | (1.477) |
| MHOODS            | 1.009                     | (.202)    | 1.034  | (.280)    | 1.015  | (.264)   | 1.248 | (1.056) |
| LCHI              | 19.931                    | (14.905)  | 6.757  | (6.069)   |        |          |       |         |
| MSOS              | 23.921                    | (31.553)  | 42.502 | (55.236)  |        |          |       |         |
| <b>AS</b>         |                           |           |        |           |        |          |       |         |
| FCHIS             | 26.820                    | (32.825)  | 14.037 | (15.758)  | 10.367 | (12.030) | *     | (*)     |
| MHCHI             | 20.231                    | (30.773)  | 8.535  | (14.215)  | 5.819  | (9.038)  | .951  | (1.187) |
| MHOODS            | 1.116                     | (.511)    | 1.105  | (.463)    | 1.209  | (.779)   | 1.173 | (.600)  |
| LCHI              | 22.792                    | (30.088)  | 11.331 | (15.867)  |        |          |       |         |
| MSOS              | 84.342                    | (111.564) | 72.685 | (106.325) |        |          |       |         |
| <b>MK</b>         |                           |           |        |           |        |          |       |         |
| FCHIS             | 8.021                     | (5.639)   | 7.953  | (6.876)   | 6.930  | (4.529)  | 4.705 | (.000)  |
| MHCHI             | 2.787                     | (3.814)   | 2.474  | (3.859)   | 2.121  | (2.352)  | 1.104 | (1.715) |
| MHOODS            | 1.010                     | (.153)    | 1.028  | (.239)    | 1.050  | (.318)   | 1.140 | (.678)  |
| LCHI              | 5.574                     | (5.173)   | 5.299  | (6.286)   |        |          |       |         |
| MSOS              | 14.761                    | (13.523)  | 27.150 | (36.025)  |        |          |       |         |
| <b>MC</b>         |                           |           |        |           |        |          |       |         |
| FCHIS             | 8.761                     | (7.262)   | 7.012  | (5.164)   | 5.441  | (2.957)  | *     | (*)     |
| MHCHI             | 4.055                     | (5.806)   | 2.125  | (2.487)   | 1.202  | (1.657)  | .946  | (1.297) |
| MHOODS            | 1.030                     | (.208)    | 1.031  | (.198)    | 1.025  | (.227)   | 1.133 | (.582)  |
| LCHI              | 5.624                     | (4.389)   | 4.411  | (4.669)   |        |          |       |         |
| MSOS              | 17.914                    | (24.077)  | 26.770 | (31.824)  |        |          |       |         |
| <b>EI</b>         |                           |           |        |           |        |          |       |         |
| FCHIS             | 12.552                    | (10.335)  | 10.967 | (7.777)   | 7.234  | (5.088)  | *     | (*)     |
| MHCHI             | 5.248                     | (6.316)   | 3.956  | (5.907)   | 2.008  | (2.665)  | 1.148 | (1.044) |
| MHOODS            | 1.056                     | (.265)    | 1.065  | (.308)    | 1.057  | (.282)   | 1.183 | (.635)  |
| LCHI              | 18.421                    | (17.631)  | 10.642 | (11.317)  |        |          |       |         |
| MSOS              | 33.703                    | (36.826)  | 44.669 | (51.750)  |        |          |       |         |

**Note.** LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

\* Values were not computed since Full Chi-Square was not able to establish five score intervals.

**Table C-20. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 17A, Subgroup Male vs Female**

| Subtest/<br>Index | <u>Random Sample Size</u> |           |         |           |        |          |       |         |
|-------------------|---------------------------|-----------|---------|-----------|--------|----------|-------|---------|
|                   | N=2000                    |           | N=1000  |           | N=500  |          | N=100 |         |
| <b>GS</b>         |                           |           |         |           |        |          |       |         |
| FCH15             | 31.396                    | (34.022)  | 18.682  | (18.735)  | 12.437 | (9.389)  | 5.133 | (4.235) |
| MHCHI             | 24.513                    | (31.273)  | 13.873  | (18.695)  | 6.992  | (8.220)  | 1.661 | (2.621) |
| MHOODS            | 1.112                     | (.485)    | 1.125   | (.525)    | 1.116  | (.483)   | 1.164 | (.614)  |
| LCHI              | 33.767                    | (35.669)  | 16.501  | (19.476)  |        |          |       |         |
| MSOS              | 259.265                   | (173.301) | 120.862 | (168.252) |        |          |       |         |
| <b>AR</b>         |                           |           |         |           |        |          |       |         |
| FCH15             | 11.819                    | (9.994)   | 8.916   | (6.926)   | 6.657  | (5.284)  | 4.495 | (2.276) |
| MHCHI             | 7.123                     | (9.496)   | 4.522   | (6.568)   | 1.748  | (3.537)  | .831  | (1.041) |
| MHOODS            | 1.013                     | (.228)    | 1.020   | (.280)    | 1.024  | (.206)   | 1.055 | (.472)  |
| LCHI              | 10.447                    | (11.077)  | 6.555   | (6.992)   |        |          |       |         |
| MSOS              | 18.837                    | (23.852)  | 25.352  | (33.488)  |        |          |       |         |
| <b>WK</b>         |                           |           |         |           |        |          |       |         |
| FCH15             | 26.202                    | (48.980)  | 15.502  | (26.110)  | 12.474 | (21.805) | 6.470 | (5.400) |
| MHCHI             | 20.383                    | (46.292)  | 9.846   | (23.291)  | 6.228  | (14.277) | 1.237 | (2.178) |
| MHOODS            | 1.050                     | (.539)    | 1.052   | (.537)    | 1.058  | (.643)   | 1.005 | (.726)  |
| LCHI              | 27.081                    | (48.089)  | 14.799  | (22.694)  |        |          |       |         |
| MSOS              | 55.178                    | (132.530) | 58.896  | (141.581) |        |          |       |         |
| <b>PC</b>         |                           |           |         |           |        |          |       |         |
| FCH15             | 7.789                     | (3.910)   | 6.726   | (3.788)   | 6.711  | (3.735)  | *     | (*)     |
| MHCHI             | 2.320                     | (2.636)   | 1.699   | (2.108)   | 1.315  | (1.853)  | .278  | (.433)  |
| MHOODS            | .980                      | (.156)    | .990    | (.201)    | 1.033  | (.281)   | 1.102 | (.531)  |
| LCHI              | 27.567                    | (17.879)  | 31.367  | (22.454)  |        |          |       |         |
| MSOS              | 14.459                    | (13.654)  | 27.429  | (37.165)  |        |          |       |         |
| <b>AS</b>         |                           |           |         |           |        |          |       |         |
| FCH15             | 22.281                    | (15.400)  | 11.408  | (8.355)   | 9.054  | (6.265)  | *     | (*)     |
| MHCHI             | 8.683                     | (8.174)   | 3.262   | (3.833)   | 2.299  | (2.789)  | .838  | (1.126) |
| MHOODS            | 1.048                     | (.301)    | 1.055   | (.321)    | 1.043  | (.307)   | 1.127 | (.515)  |
| LCHI              | 33.096                    | (35.175)  | 17.411  | (17.346)  |        |          |       |         |
| MSOS              | 76.006                    | (72.018)  | 437.474 | (262.111) |        |          |       |         |
| <b>MK</b>         |                           |           |         |           |        |          |       |         |
| FCH15             | 13.009                    | (13.001)  | 10.896  | (9.976)   | 6.773  | (4.163)  | 4.497 | (2.494) |
| MHCHI             | 7.482                     | (9.569)   | 5.979   | (8.292)   | 2.448  | (3.530)  | 1.061 | (1.747) |
| MHOODS            | 1.018                     | (.224)    | 1.032   | (.283)    | 1.036  | (.265)   | 1.056 | (.503)  |
| LCHI              | 10.216                    | (11.657)  | 7.420   | (6.916)   |        |          |       |         |
| MSOS              | 18.543                    | (20.186)  | 30.426  | (34.031)  |        |          |       |         |
| <b>MC</b>         |                           |           |         |           |        |          |       |         |
| FCH15             | 13.694                    | (10.804)  | 7.036   | (5.212)   | 6.703  | (5.670)  | 8.608 | (4.305) |
| MHCHI             | 5.082                     | (6.860)   | 2.499   | (3.443)   | 2.974  | (4.907)  | 1.269 | (1.293) |
| MHOODS            | 1.015                     | (.181)    | 1.017   | (.198)    | 1.023  | (.281)   | 1.214 | (.719)  |
| LCHI              | 11.165                    | (8.993)   | 6.596   | (5.484)   |        |          |       |         |
| MSOS              | 29.162                    | (30.833)  | 27.444  | (22.094)  |        |          |       |         |
| <b>EI</b>         |                           |           |         |           |        |          |       |         |
| FCH15             | 18.500                    | (16.227)  | 11.944  | (8.399)   | 8.250  | (6.406)  | 7.432 | (.000)  |
| MHCHI             | 11.460                    | (13.851)  | 4.483   | (5.826)   | 3.023  | (3.726)  | 1.226 | (1.171) |
| MHOODS            | 1.050                     | (.291)    | 1.048   | (.283)    | 1.055  | (.339)   | 1.218 | (.714)  |
| LCHI              | 28.356                    | (25.140)  | 9.891   | (8.815)   |        |          |       |         |
| MSOS              | 47.348                    | (43.875)  | 39.248  | (37.860)  |        |          |       |         |

**Note.** LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

\* Values were not computed since Full Chi-Square was not able to establish five score intervals.

**Table C-21. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 17B, Subgroup White vs White**

| Subtest/<br>Index | Random Sample Size |          |         |           |       |         |               |
|-------------------|--------------------|----------|---------|-----------|-------|---------|---------------|
|                   | N=2000             | N=1000   |         | N=500     | N=100 |         |               |
| <b>GS</b>         |                    |          |         |           |       |         |               |
| FCH15             | 3.735              | (2.367)  | 4.471   | (3.060)   | 4.923 | (3.720) | 9.085 (4.783) |
| MHCHI             | .813               | (.814)   | .998    | (1.352)   | .813  | (.904)  | .680 (1.463)  |
| MHOODS            | .994               | (.086)   | 1.012   | (.126)    | 1.012 | (.205)  | 1.108 (.633)  |
| LCHI              | 26.977             | (35.553) | 17.748  | (17.625)  |       |         |               |
| MSOS              | 14.437             | (16.442) | 21.040  | (19.944)  |       |         |               |
| <b>AR</b>         |                    |          |         |           |       |         |               |
| FCH15             | 4.649              | (2.879)  | 4.020   | (2.471)   | 3.903 | (2.598) | 4.767 (3.783) |
| MHCHI             | 1.185              | (1.431)  | .565    | (.807)    | .574  | (.659)  | .576 (1.049)  |
| MHOODS            | 1.015              | (.114)   | 1.003   | (.096)    | 1.012 | (.148)  | 1.113 (.504)  |
| LCHI              | 22.061             | (31.020) | 12.864  | (11.430)  |       |         |               |
| MSOS              | 29.141             | (28.128) | 26.641  | (28.220)  |       |         |               |
| <b>WK</b>         |                    |          |         |           |       |         |               |
| FCH15             | 4.077              | (2.300)  | 4.353   | (2.548)   | 4.858 | (2.916) | 3.375 (2.939) |
| MHCHI             | 1.038              | (1.332)  | .681    | (.786)    | .806  | (.915)  | .405 (.643)   |
| MHOODS            | 1.003              | (.137)   | .990    | (.159)    | 1.031 | (.286)  | 1.131 (.768)  |
| LCHI              | 12.045             | (13.600) | 6.640   | (6.990)   |       |         |               |
| MSOS              | 14.381             | (30.626) | 15.740  | (27.717)  |       |         |               |
| <b>PC</b>         |                    |          |         |           |       |         |               |
| FCH15             | 3.435              | (2.619)  | 4.685   | (3.508)   | 5.214 | (2.850) | *             |
| MHCHI             | .608               | (.888)   | .734    | (.950)    | .573  | (1.167) | .322 (.374)   |
| MHOODS            | .988               | (.099)   | 1.001   | (.140)    | 1.015 | (.249)  | 1.101 (.507)  |
| LCHI              | **                 | (**)     | 16.929  | (14.726)  |       |         |               |
| MSOS              | **                 | (**)     | 389.115 | (171.154) |       |         |               |
| <b>AS</b>         |                    |          |         |           |       |         |               |
| FCH15             | 3.575              | (1.773)  | 4.769   | (3.124)   | 4.021 | (2.519) | 5.114 (2.513) |
| MHCHI             | .549               | (.668)   | .891    | (1.374)   | .884  | (1.134) | .957 (1.410)  |
| MHOODS            | .993               | (.068)   | 1.015   | (.118)    | 1.018 | (.183)  | 1.071 (.457)  |
| LCHI              | 16.426             | (16.000) | 8.071   | (9.639)   |       |         |               |
| MSOS              | 9.713              | (7.968)  | 14.265  | (10.676)  |       |         |               |
| <b>MK</b>         |                    |          |         |           |       |         |               |
| FCH15             | 4.591              | (3.031)  | 4.590   | (2.872)   | 5.530 | (3.086) | 4.267 (1.675) |
| MHCHI             | 1.388              | (1.971)  | .928    | (1.423)   | 1.223 | (1.458) | .431 (.579)   |
| MHOODS            | 1.002              | (.096)   | 1.013   | (.132)    | 1.019 | (.203)  | 1.019 (.299)  |
| LCHI              | 21.093             | (29.625) | 10.480  | (12.591)  |       |         |               |
| MSOS              | 28.467             | (48.562) | 32.803  | (50.999)  |       |         |               |
| <b>MC</b>         |                    |          |         |           |       |         |               |
| FCH15             | 3.201              | (2.122)  | 4.564   | (2.733)   | 4.642 | (3.255) | 5.167 (1.871) |
| MHCHI             | .704               | (1.170)  | .591    | (.752)    | .896  | (1.298) | .261 (.365)   |
| MHOODS            | 1.002              | (.069)   | .998    | (.092)    | 1.025 | (.176)  | 1.022 (.275)  |
| LCHI              | 23.190             | (26.500) | 14.661  | (15.938)  |       |         |               |
| MSOS              | 24.239             | (47.999) | 26.820  | (34.279)  |       |         |               |
| <b>EI</b>         |                    |          |         |           |       |         |               |
| FCH15             | 3.741              | (1.604)  | 3.933   | (2.450)   | 4.090 | (2.882) | 3.658 (2.048) |
| MHCHI             | 1.157              | (1.232)  | .979    | (1.072)   | .661  | (.998)  | .263 (.364)   |
| MHOODS            | .993               | (.092)   | 1.005   | (.132)    | .991  | (.167)  | 1.094 (.330)  |
| LCHI              | 37.318             | (32.158) | 13.976  | (19.875)  |       |         |               |
| MSOS              | 24.222             | (28.169) | 25.824  | (23.868)  |       |         |               |

**Note.** LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

\* Values were not computed since Full Chi-Square was not able to establish five score intervals.

\*\* Values were not computed since parameter estimates from LOGIST5 did not converge.

**Table C-22. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 17B, Subgroup White vs Black**

| Subtest/<br>Index | <u>Random Sample Size</u> |          |         |           |        |          |       |         |
|-------------------|---------------------------|----------|---------|-----------|--------|----------|-------|---------|
|                   | N=2000                    |          | N=1000  |           | N=500  |          | N=100 |         |
| <b>GS</b>         |                           |          |         |           |        |          |       |         |
| FCHI5             | 24.139                    | (32.006) | 11.969  | (13.171)  | 10.121 | (10.934) | *     | ( * )   |
| MHCHI             | 15.656                    | (26.423) | 5.886   | (9.424)   | 5.417  | (8.435)  | 1.058 | (1.623) |
| MHOODS            | 1.066                     | (.422)   | 1.061   | (.362)    | 1.100  | (.551)   | 1.139 | (.623)  |
| LCHI              | 21.436                    | (25.247) | 7.485   | (9.405)   |        |          |       |         |
| MSOS              | 37.918                    | (51.701) | 103.237 | (128.450) |        |          |       |         |
| <b>AR</b>         |                           |          |         |           |        |          |       |         |
| FCHI5             | 12.592                    | (10.556) | 8.467   | (7.970)   | 8.948  | (6.227)  | 7.038 | (5.923) |
| MHCHI             | 5.127                     | (7.487)  | 3.124   | (5.336)   | 2.863  | (3.447)  | 1.288 | (2.266) |
| MHOODS            | 1.027                     | (.209)   | 1.020   | (.242)    | 1.043  | (.338)   | 1.120 | (.619)  |
| LCHI              | 14.065                    | (12.071) | 11.111  | (11.248)  |        |          |       |         |
| MSOS              | 29.285                    | (28.923) | 25.705  | (31.468)  |        |          |       |         |
| <b>WK</b>         |                           |          |         |           |        |          |       |         |
| FCHI5             | 24.518                    | (38.867) | 14.423  | (19.792)  | 9.173  | (8.877)  | *     | ( * )   |
| MHCHI             | 17.316                    | (33.048) | 9.156   | (16.266)  | 3.589  | (5.892)  | 1.590 | (2.114) |
| MHOODS            | 1.108                     | (.553)   | 1.115   | (.568)    | 1.105  | (.586)   | 1.264 | (.747)  |
| LCHI              | 22.626                    | (31.770) | 14.135  | (16.687)  |        |          |       |         |
| MSOS              | 54.471                    | (93.071) | 64.603  | (100.705) |        |          |       |         |
| <b>PC</b>         |                           |          |         |           |        |          |       |         |
| FCHI5             | 16.498                    | (14.523) | 9.474   | (7.215)   | 7.358  | (4.041)  | *     | ( * )   |
| MHCHI             | 8.658                     | (8.623)  | 4.273   | (2.951)   | 3.240  | (3.522)  | .135  | (.169)  |
| MHOODS            | .975                      | (.290)   | .956    | (.290)    | 1.029  | (.428)   | 1.050 | (.253)  |
| LCHI              | **                        | ( ** )   | 9.715   | (7.609)   |        |          |       |         |
| MSOS              | **                        | ( ** )   | 430.509 | (234.316) |        |          |       |         |
| <b>AS</b>         |                           |          |         |           |        |          |       |         |
| FCHI5             | 24.849                    | (33.462) | 15.167  | (19.685)  | 11.388 | (7.636)  | 5.187 | (.000)  |
| MHCHI             | 13.371                    | (23.350) | 7.135   | (13.714)  | 4.842  | (5.913)  | 1.158 | (1.267) |
| MHOODS            | 1.058                     | (.396)   | 1.062   | (.447)    | 1.081  | (.450)   | 1.110 | (.509)  |
| LCHI              | 37.857                    | (27.139) | 20.654  | (16.736)  |        |          |       |         |
| MSOS              | 64.197                    | (92.863) | 73.847  | (99.188)  |        |          |       |         |
| <b>MK</b>         |                           |          |         |           |        |          |       |         |
| FCHI5             | 15.986                    | (11.817) | 11.181  | (9.248)   | 8.573  | (7.564)  | 5.519 | (1.913) |
| MHCHI             | 9.952                     | (10.195) | 5.323   | (8.202)   | 3.825  | (6.590)  | .692  | (.884)  |
| MHOODS            | 1.031                     | (.259)   | 1.029   | (.261)    | 1.042  | (.357)   | 1.057 | (.392)  |
| LCHI              | 16.072                    | (14.714) | 10.479  | (13.595)  |        |          |       |         |
| MSOS              | 32.522                    | (31.599) | 40.478  | (47.909)  |        |          |       |         |
| <b>MC</b>         |                           |          |         |           |        |          |       |         |
| FCHI5             | 11.890                    | (11.278) | 8.167   | (6.997)   | 7.689  | (4.865)  | 4.681 | (.000)  |
| MHCHI             | 5.310                     | (7.057)  | 2.566   | (3.930)   | 2.599  | (3.338)  | .623  | (1.011) |
| MHOODS            | 1.033                     | (.207)   | 1.030   | (.224)    | 1.056  | (.299)   | 1.050 | (.388)  |
| LCHI              | 11.175                    | (12.320) | 7.495   | (5.753)   |        |          |       |         |
| MSOS              | 21.885                    | (35.806) | 40.272  | (50.632)  |        |          |       |         |
| <b>EI</b>         |                           |          |         |           |        |          |       |         |
| FCHI5             | 16.713                    | (9.975)  | 11.789  | (7.761)   | 9.198  | (5.941)  | 5.156 | (2.896) |
| MHCHI             | 8.348                     | (10.032) | 5.533   | (7.102)   | 3.850  | (4.560)  | 1.530 | (1.781) |
| MHOODS            | 1.051                     | (.234)   | 1.086   | (.331)    | 1.069  | (.327)   | 1.137 | (.582)  |
| LCHI              | 21.885                    | (15.592) | 9.972   | (7.998)   |        |          |       |         |
| MSOS              | 23.742                    | (21.432) | 35.410  | (36.111)  |        |          |       |         |

**Note.** LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

\* Values were not computed since Full Chi-Square was not able to establish five score intervals.

\*\* Values were not computed since parameter estimates from LOGIST5 did not converge.

**Table C-23. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 17B, Subgroup White vs Hispanic**

| Subtest/<br>Index | <u>Random Sample Size</u> |           |         |           |        |          |                  |
|-------------------|---------------------------|-----------|---------|-----------|--------|----------|------------------|
|                   | N=2000                    |           | N=1000  |           | N=500  | N=100    |                  |
| GS                |                           |           |         |           |        |          |                  |
| FCH15             | 19.157                    | (33.327)  | 12.237  | (21.760)  | 8.562  | (10.823) | *                |
| MHCHI             | 13.196                    | (29.789)  | 6.373   | (19.294)  | 3.545  | (8.796)  | 1.228<br>(2.760) |
| MHOODS            | 1.069                     | (.488)    | 1.076   | (.572)    | 1.085  | (.598)   | 1.201<br>(.930)  |
| LCHI              | 15.819                    | (24.555)  | 8.023   | (14.410)  |        |          |                  |
| MSOS              | 54.598                    | (116.211) | 61.174  | (157.035) |        |          |                  |
| AR                |                           |           |         |           |        |          |                  |
| FCH15             | 9.501                     | (8.161)   | 6.460   | (4.298)   | 6.300  | (3.943)  | 6.732<br>(.000)  |
| MHCHI             | 5.752                     | (10.499)  | 1.954   | (2.819)   | 1.520  | (2.445)  | .838<br>(1.917)  |
| MHOODS            | 1.034                     | (.212)    | 1.027   | (.218)    | 1.044  | (.285)   | 1.151<br>(.786)  |
| LCHI              | 9.999                     | (12.337)  | 5.547   | (5.986)   |        |          |                  |
| MSOS              | 27.243                    | (32.877)  | 29.795  | (31.104)  |        |          |                  |
| WK                |                           |           |         |           |        |          |                  |
| FCH15             | 32.712                    | (39.924)  | 17.990  | (20.343)  | 12.516 | (11.052) | *                |
| MHCHI             | 23.300                    | (34.152)  | 10.854  | (15.537)  | 5.242  | (7.411)  | 1.059<br>(1.987) |
| MHOODS            | 1.381                     | (1.146)   | 1.375   | (1.262)   | 1.431  | (1.268)  | 1.385<br>(1.435) |
| LCHI              | 29.694                    | (31.523)  | 16.018  | (17.583)  |        |          |                  |
| MSOS              | 71.087                    | (77.388)  | 74.527  | (80.920)  |        |          |                  |
| PC                |                           |           |         |           |        |          |                  |
| FCH15             | 10.624                    | (9.096)   | 9.116   | (9.817)   | 6.384  | (4.976)  | *                |
| MHCHI             | 3.410                     | (5.017)   | 2.579   | (2.541)   | 1.147  | (1.845)  | .513<br>(.963)   |
| MHOODS            | 1.022                     | (.227)    | 1.025   | (.310)    | 1.070  | (.375)   | 1.236<br>(.828)  |
| LCHI              | **                        | (**)      | 9.159   | (12.384)  |        |          |                  |
| MSOS              | **                        | (**)      | 595.263 | (356.403) |        |          |                  |
| AS                |                           |           |         |           |        |          |                  |
| FCH15             | 31.389                    | (37.683)  | 22.689  | (26.430)  | 14.621 | (13.905) | *                |
| MHCHI             | 22.769                    | (32.215)  | 14.784  | (23.581)  | 9.172  | (10.951) | 2.006<br>(2.587) |
| MHOODS            | 1.145                     | (.603)    | 1.193   | (.765)    | 1.241  | (.839)   | 1.275<br>(.941)  |
| LCHI              | 33.368                    | (33.194)  | 21.183  | (22.077)  |        |          |                  |
| MSOS              | 105.698                   | (131.794) | 141.535 | (172.541) |        |          |                  |
| MK                |                           |           |         |           |        |          |                  |
| FCH15             | 8.304                     | (7.134)   | 6.902   | (3.206)   | 6.397  | (3.473)  | *                |
| MHCHI             | 4.080                     | (5.953)   | 1.929   | (2.368)   | 1.536  | (1.810)  | 1.460<br>(1.681) |
| MHOODS            | 1.028                     | (.219)    | 1.025   | (.209)    | 1.044  | (.283)   | 1.170<br>(.769)  |
| LCHI              | 6.748                     | (4.724)   | 4.602   | (4.213)   |        |          |                  |
| MSOS              | 19.079                    | (17.701)  | 24.291  | (21.505)  |        |          |                  |
| MC                |                           |           |         |           |        |          |                  |
| FCH15             | 8.748                     | (6.409)   | 5.786   | (3.778)   | 6.865  | (3.748)  | *                |
| MHCHI             | 3.069                     | (5.033)   | 1.541   | (2.131)   | 1.638  | (2.360)  | .288<br>(.564)   |
| MHOODS            | 1.016                     | (.192)    | 1.015   | (.192)    | 1.014  | (.271)   | 1.043<br>(.357)  |
| LCHI              | 8.208                     | (7.580)   | 4.194   | (4.256)   |        |          |                  |
| MSOS              | 23.296                    | (23.845)  | 29.192  | (31.558)  |        |          |                  |
| EI                |                           |           |         |           |        |          |                  |
| FCH15             | 11.163                    | (10.181)  | 8.727   | (6.802)   | 8.497  | (6.497)  | *                |
| MHCHI             | 4.749                     | (7.009)   | 2.816   | (3.347)   | 2.285  | (3.567)  | 1.532<br>(2.170) |
| MHOODS            | 1.038                     | (.233)    | 1.051   | (.245)    | 1.072  | (.343)   | 1.707<br>(2.471) |
| LCHI              | 19.772                    | (21.905)  | 10.814  | (10.496)  |        |          |                  |
| MSOS              | 26.511                    | (25.564)  | 40.650  | (44.791)  |        |          |                  |

**Note.** LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

\* Values were not computed since Full Chi-Square was not able to establish five score intervals.

\*\* Values were not computed since parameter estimates from LOGIST5 did not converge.

**Table C-24. Means and Standard Deviations (in Parentheses) of DIF Indices for Form 17B, Subgroup Male vs Female**

| Subtest/<br>Index | <u>Random Sample Size</u> |          |         |           |        |          |               |
|-------------------|---------------------------|----------|---------|-----------|--------|----------|---------------|
|                   | N=2000                    | N=1000   |         | N=500     | N=100  |          |               |
| GS                |                           |          |         |           |        |          |               |
| FCHI5             | 32.947                    | (26.011) | 20.501  | (15.621)  | 10.718 | (6.690)  | 5.951 (3.968) |
| MHCHI             | 25.691                    | (27.007) | 14.913  | (16.087)  | 5.875  | (6.374)  | 2.087 (2.530) |
| MHOODS            | 1.116                     | (.478)   | 1.140   | (.551)    | 1.102  | (.447)   | 1.243 (.820)  |
| LCHI              | 32.896                    | (32.072) | 21.210  | (18.116)  |        |          |               |
| MSOS              | 71.706                    | (77.369) | 76.174  | (77.114)  |        |          |               |
| AR                |                           |          |         |           |        |          |               |
| FCHI5             | 17.755                    | (31.081) | 11.461  | (20.255)  | 8.316  | (8.838)  | 5.706 (3.740) |
| MHCHI             | 10.638                    | (28.648) | 6.414   | (18.620)  | 3.669  | (7.043)  | .804 (1.213)  |
| MHOODS            | 1.029                     | (.371)   | 1.044   | (.453)    | 1.051  | (.410)   | 1.083 (.434)  |
| LCHI              | 19.968                    | (23.480) | 8.182   | (19.201)  |        |          |               |
| MSOS              | 29.647                    | (54.112) | 35.345  | (87.837)  |        |          |               |
| WK                |                           |          |         |           |        |          |               |
| FCHI5             | 22.725                    | (22.246) | 13.184  | (12.025)  | 11.874 | (10.085) | 4.307 (2.655) |
| MHCHI             | 17.105                    | (22.383) | 7.867   | (10.249)  | 5.365  | (7.433)  | 1.354 (1.619) |
| MHOODS            | 1.120                     | (.472)   | 1.097   | (.441)    | 1.179  | (.568)   | 1.359 (1.063) |
| LCHI              | 25.794                    | (28.343) | 12.146  | (12.114)  |        |          |               |
| MSOS              | 43.471                    | (64.988) | 41.475  | (50.257)  |        |          |               |
| PC                |                           |          |         |           |        |          |               |
| FCHI5             | 19.750                    | (27.836) | 11.632  | (18.208)  | 8.233  | (6.800)  | *             |
| MHCHI             | 14.561                    | (28.091) | 7.333   | (16.951)  | 3.625  | (6.126)  | .760 (.606)   |
| MHOODS            | .959                      | (.452)   | .969    | (.487)    | .979   | (.436)   | 1.125 (.634)  |
| LCHI              | 23.649                    | (35.836) | 32.362  | (22.987)  |        |          |               |
| MSOS              | 56.515                    | (83.334) | 142.641 | (240.608) |        |          |               |
| AS                |                           |          |         |           |        |          |               |
| FCHI5             | 20.695                    | (17.585) | 12.980  | (9.539)   | 10.435 | (8.711)  | 4.991 (4.359) |
| MHCHI             | 9.022                     | (11.989) | 4.604   | (4.791)   | 2.631  | (3.620)  | 1.140 (1.612) |
| MHOODS            | 1.070                     | (.384)   | 1.052   | (.324)    | 1.085  | (.441)   | 1.127 (.588)  |
| LCHI              | 34.152                    | (28.937) | 17.884  | (14.450)  |        |          |               |
| MSOS              | 64.085                    | (53.266) | 77.451  | (68.154)  |        |          |               |
| MK                |                           |          |         |           |        |          |               |
| FCHI5             | 14.587                    | (14.429) | 9.797   | (7.181)   | 7.298  | (5.534)  | 5.416 (2.828) |
| MHCHI             | 9.759                     | (14.647) | 4.958   | (6.739)   | 2.141  | (3.758)  | 1.032 (1.263) |
| MHOODS            | 1.024                     | (.255)   | 1.022   | (.264)    | 1.009  | (.235)   | 1.104 (.549)  |
| LCHI              | 12.319                    | (14.097) | 5.946   | (5.274)   |        |          |               |
| MSOS              | 22.867                    | (26.899) | 23.478  | (21.802)  |        |          |               |
| MC                |                           |          |         |           |        |          |               |
| FCHI5             | 14.236                    | (11.209) | 10.229  | (6.078)   | 7.996  | (7.732)  | 6.636 (4.757) |
| MHCHI             | 5.960                     | (8.113)  | 2.532   | (3.769)   | 2.439  | (3.405)  | 1.434 (2.204) |
| MHOODS            | 1.012                     | (.207)   | 1.013   | (.195)    | 1.039  | (.275)   | 1.126 (.633)  |
| LCHI              | 14.186                    | (11.937) | 11.385  | (9.550)   |        |          |               |
| MSOS              | 36.050                    | (37.384) | 55.986  | (51.195)  |        |          |               |
| EI                |                           |          |         |           |        |          |               |
| FCHI5             | 17.813                    | (14.089) | 12.996  | (8.674)   | 10.819 | (5.653)  | *             |
| MHCHI             | 10.794                    | (14.555) | 5.615   | (8.665)   | 4.015  | (4.985)  | .955 (1.136)  |
| MHOODS            | 1.053                     | (.274)   | 1.069   | (.314)    | 1.077  | (.348)   | 1.161 (.600)  |
| LCHI              | 13.962                    | (10.270) | 8.084   | (6.274)   |        |          |               |
| MSOS              | 34.377                    | (24.823) | 40.515  | (34.808)  |        |          |               |

**Note.** LOGIST5 parameter estimates were not computed for samples 100 and 500; therefore, Lord's Chi-Square and Modified Sum of Squares are not available. Modified Sum of Squares values were multiplied by 10,000 before the calculation of the mean and standard deviation.

\* Values were not computed since Full Chi-Square was not able to establish five score intervals.

**APPENDIX D: CORRELATIONS BETWEEN DIF INDICES BY ASVAB FORM,  
COMPARISON GROUP AND SAMPLE SIZE**

**Table D-1. Correlations between DIF Indices on ASVAB Form 10 by  
Comparison Group and Two Sample Sizes**

|           | White vs White |       |        |      |      | Black vs White |       |        |      |      |
|-----------|----------------|-------|--------|------|------|----------------|-------|--------|------|------|
|           | FCH15          | MHCHI | MHOODS | LCHI | MSOS | FCH15          | MHCHI | MHOODS | LCHI | MSOS |
| <b>GS</b> |                |       |        |      |      |                |       |        |      |      |
| FCH15     |                | .19   | .46    | .21  | -.02 |                | .97*  | .85*   | .95* | .91* |
| MHCHI     | .04            |       | .39    | -.18 | -.09 |                | .96*  | .80*   | .93* | .94* |
| MHOODS    | .12            | -.12  |        | -.15 | -.27 |                | .89*  | .77*   | .94* | .71* |
| LCHI      | -.03           | .15   | .04    |      | .57  |                | .98*  | .93*   | .92* | .84* |
| MSOS      | .17            | -.01  | -.13   | .50  |      |                | .90*  | .96*   | .66* | .83* |
| <b>AR</b> |                |       |        |      |      |                |       |        |      |      |
| FCH15     |                | .41   | .43    | .02  | -.28 |                | .87*  | .47    | .72* | .96* |
| MHCHI     | .54            |       | .68*   | .22  | -.02 |                | .91*  | .13    | .92* | .95* |
| MHOODS    | -.12           | .09   |        | .17  | .06  |                | .78*  | .52    | -.03 | .33  |
| LCHI      | -.05           | -.18  | -.14   |      | .59* |                | .85*  | .97*   | .44  | .85* |
| MSOS      | .07            | -.01  | -.22   | .65* |      |                | .95*  | .95*   | .59* | .93* |
| <b>WK</b> |                |       |        |      |      |                |       |        |      |      |
| FCH15     |                | .73*  | .21    | .21  | .01  |                | .71*  | .38    | .50  | .65* |
| MHCHI     | .38            |       | .46    | .26  | .09  |                | .71*  | -.01   | .19  | .86* |
| MHOODS    | .17            | .51*  |        | .29  | .18  |                | .35   | -.09   | .61* | .15  |
| LCHI      | .46            | -.02  | .11    |      | .38  |                | .61*  | .24    | .60* | .19  |
| MSOS      | .35            | .01   | .11    | .43  |      |                | .70*  | .88*   | .06  | .20  |
| <b>PC</b> |                |       |        |      |      |                |       |        |      |      |
| FCH15     |                | .46   | -.38   | .11  | .04  |                | .64   | .39    | .67  | .74* |
| MHCHI     | .35            |       | -.09   | .67  | .29  |                | .81*  | .21    | .10  | .41  |
| MHOODS    | .17            | .20   |        | -.04 | -.23 |                | .44   | -.07   | .09  | .17  |
| LCHI      | xx             | xx    | xx     |      | .75* |                | xx    | xx     | xx   | .84* |
| MSOS      | .00            | .00   | .00    | .00  |      |                | .00   | .00    | .00  | .00  |
| <b>AS</b> |                |       |        |      |      |                |       |        |      |      |
| FCH15     |                | .49   | -.02   | .36  | .45  |                | .67*  | .62*   | .13  | .67* |
| MHCHI     | .61*           |       | -.34   | .75* | .73* |                | .74*  | .37    | .46  | .37  |
| MHOODS    | -.15           | -.29  |        | -.50 | -.19 |                | .79*  | .56    | -.35 | .24  |
| LCHI      | .20            | .08   | -.04   |      | .79* |                | .47   | .42    | .28  | .19  |
| MSOS      | .26            | .41   | -.07   | .40  |      |                | .78*  | .37    | .41  | .38  |
| <b>MK</b> |                |       |        |      |      |                |       |        |      |      |
| FCH15     |                | .39   | -.38   | .41  | .16  |                | .93*  | .59*   | .93* | .97* |
| MHCHI     | .35            |       | -.49   | .09  | .29  |                | .94*  | .33    | .95* | .96* |
| MHOODS    | .05            | -.39  |        | -.17 | -.34 |                | .39   | .15    | .44  | .51  |
| LCHI      | -.07           | .16   | .12    |      | .42  |                | .90*  | .97*   | .08  | .96* |
| MSOS      | -.16           | .12   | -.17   | .60* |      |                | .96*  | .94*   | .36  | .91* |
| <b>MC</b> |                |       |        |      |      |                |       |        |      |      |
| FCH15     |                | .33   | .19    | .18  | .22  |                | .76*  | .78*   | .82* | .62* |
| MHCHI     | .55            |       | .40    | -.10 | .02  |                | .89*  | .29    | .65* | .72* |
| MHOODS    | -.22           | -.28  |        | -.08 | .02  |                | .88*  | .68*   | .65* | .19  |
| LCHI      | .34            | .19   | -.23   |      | .82* |                | .87*  | .84*   | .65* | .54  |
| MSOS      | -.04           | -.00  | -.03   | .60* |      |                | .87*  | .90*   | .65* | .90* |
| <b>EI</b> |                |       |        |      |      |                |       |        |      |      |
| FCH15     |                | .21   | .10    | .11  | .25  |                | .60   | .32    | .31  | .74* |
| MHCHI     | .20            |       | .31    | -.00 | -.07 |                | .67*  | -.11   | .59  | .66* |
| MHOODS    | .38            | .51   |        | -.29 | -.35 |                | .48   | -.23   | -.44 | .11  |
| LCHI      | .16            | -.14  | -.16   |      | .54  |                | .42   | .25    | .31  | .59* |
| MSOS      | .43            | -.03  | -.00   | .58  |      |                | .44   | .67*   | -.35 | .49  |

Table D-1. (Concluded)

|        | <u>Hispanic vs White</u> |       |        |      |      | <u>Female vs Male</u> |       |        |      |      |
|--------|--------------------------|-------|--------|------|------|-----------------------|-------|--------|------|------|
|        | FCH15                    | MHCHI | MHOODS | LCHI | MSOS | FCH15                 | MHCHI | MHOODS | LCHI | MSOS |
| GS     |                          |       |        |      |      |                       |       |        |      |      |
| FCH15  |                          | .97*  | .72*   | .85* | .87* |                       | .97*  | .77*   | .95* | .90* |
| MHCHI  | .97*                     |       | .64*   | .78* | .89* |                       | .98*  | .71*   | .93* | .93* |
| MHOODS | .80*                     | .71*  |        | .72* | .40  |                       | .77*  | .69*   | .82* | .58  |
| LCHI   | .98*                     | .93*  | .82*   |      | .70* |                       | .90*  | .92*   | .82* | .81* |
| MSOS   | .83*                     | .86*  | .39    | .79* |      |                       | .93*  | .95*   | .54  | .80* |
| AR     |                          |       |        |      |      |                       |       |        |      |      |
| FCH15  |                          | .91*  | .64*   | .82* | .87* |                       | .91*  | .52    | .42  | .65* |
| MHCHI  | .94*                     |       | .61*   | .94* | .92* |                       | .92*  | .33    | .58* | .81* |
| MHOODS | .89*                     | .78*  |        | .61* | .68* |                       | .55*  | .36    | -.45 | -.17 |
| LCHI   | .92*                     | .97*  | .74*   |      | .96* |                       | .54   | .66*   | -.32 | .89* |
| MSOS   | .96*                     | .97*  | .78*   | .98* |      |                       | .79*  | .92*   | .10  | .79* |
| WK     |                          |       |        |      |      |                       |       |        |      |      |
| FCH15  |                          | .97*  | .36    | .31  | .19  |                       | .97*  | .27    | .46  | .91* |
| MHCHI  | .98*                     |       | .27    | .25  | .17  |                       | .99*  | .29    | .41  | .88* |
| MHOODS | .57*                     | .50   |        | .53* | .80* |                       | .19   | .20    | -.50 | .09  |
| LCHI   | .55*                     | .41   | .38    |      | .36  |                       | .85*  | .85*   | -.22 | .62* |
| MSOS   | .85*                     | .86*  | .16    | .39  |      |                       | .86*  | .89*   | .12  | .83* |
| PC     |                          |       |        |      |      |                       |       |        |      |      |
| FCH15  |                          | .87*  | .55    | .69  | .89* |                       | .97*  | .34    | .51  | .07  |
| MHCHI  | .91*                     |       | .32    | .55  | .83* |                       | .99*  | .41    | .39  | -.01 |
| MHOODS | .16                      | -.15  |        | -.11 | .08  |                       | .62   | .73    | -.27 | .24  |
| LCHI   | xx                       | xx    | xx     |      | .91* |                       | .77*  | .85*   | .92* | .42  |
| MSOS   | .00                      | .00   | .00    | .00  |      |                       | .92*  | .86*   | .33  | .57  |
| AS     |                          |       |        |      |      |                       |       |        |      |      |
| FCH15  |                          | .94*  | .56    | .76* | .90* |                       | .88*  | .59*   | .91* | .82* |
| MHCHI  | .92*                     |       | .27    | .88* | .84* |                       | .77*  | .32    | .82* | .70* |
| MHOODS | .62*                     | .29   |        | -.02 | .60* |                       | .54   | -.05   | .51  | .55  |
| LCHI   | .39                      | .64*  | -.34   |      | .70* |                       | .89*  | .56    | .64* | .93* |
| MSOS   | .90*                     | .80*  | .60*   | .38  |      |                       | .73*  | .76*   | .20  | .75* |
| MK     |                          |       |        |      |      |                       |       |        |      |      |
| FCH15  |                          | .88*  | .36    | .85* | .87* |                       | .92*  | .38    | .74* | .77* |
| MHCHI  | .95*                     |       | .43    | .90* | .92* |                       | .91*  | .39    | .70* | .75* |
| MHOODS | .56                      | .59*  |        | .26  | .51  |                       | .31   | .31    | .49  | .40  |
| LCHI   | .93*                     | .92*  | .39    |      | .94* |                       | .55   | .61*   | -.10 | .96* |
| MSOS   | .93*                     | .94*  | .74*   | .90* |      |                       | .68*  | .75*   | .24  | .88* |
| MC     |                          |       |        |      |      |                       |       |        |      |      |
| FCH15  |                          | .68*  | .52    | .53  | .40  |                       | .92*  | .65*   | .64* | -.08 |
| MHCHI  | .72*                     |       | .01    | .68* | .66* |                       | .88*  | .51    | .73* | -.12 |
| MHOODS | .72*                     | .17   |        | -.02 | -.31 |                       | .67*  | .33    | .02  | .29  |
| LCHI   | -.11                     | .45   | -.66*  |      | .87* |                       | .88*  | .70*   | .54  | -.18 |
| MSOS   | .31                      | .50   | -.02   | .50  |      |                       | .55   | .82*   | -.15 | .48  |
| ET     |                          |       |        |      |      |                       |       |        |      |      |
| FCH15  |                          | .25   | .12    | .24  | .38  |                       | .95*  | .71*   | .69* | .95* |
| MHCHI  | .71*                     |       | -.09   | .27  | .42  |                       | .94*  | .55    | .80* | .89* |
| MHOODS | .48                      | .08   |        | -.48 | -.48 |                       | .77*  | .57    | .12  | .62  |
| LCHI   | .63                      | .24   | .23    |      | .87* |                       | .75*  | .77*   | .37  | .74* |
| MSOS   | .50                      | .60   | -.32   | .64  |      |                       | .78*  | .77*   | .37  | .91* |

Note. N = 1,000 for values above the diagonal and N = 2,000 for values below the diagonal; \* p < .001. 'xx' for correlation entries indicates missing values for Lord's Chi-Square and Modified Sum of Squares. These values were not computed since parameter estimates from LOGIST5 did not converge.

**Table D-2. Correlations between DIF Indices on ASVAB Form 15C by Comparison Group and Two Sample Sizes**

|           | <u>White vs White</u> |       |        |      |      | <u>Black vs White</u> |       |        |      |      |
|-----------|-----------------------|-------|--------|------|------|-----------------------|-------|--------|------|------|
|           | FCH15                 | MHCHI | MHOODS | LCHI | MSOS | FCH15                 | MHCHI | MHOODS | LCHI | MSOS |
| <b>GS</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     | .12                   | .12   | .09    | -.14 |      |                       | .84*  | .78*   | .81* | .87* |
| MHCHI     | .64*                  |       | .60*   | -.17 | .13  |                       | .82*  | .68*   | .60* | .92* |
| MHOODS    | -.52                  | -.19  |        | .02  | .25  |                       | .80*  | .60*   | .42  | .77* |
| LCHI      | -.20                  | -.03  | .22    |      | .27  |                       | .85*  | .80*   | .55  | .64* |
| MSOS      | -.30                  | -.07  | .48    | .67* |      |                       | .65*  | .64*   | .28  | .77* |
| <b>AR</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     | .30                   | .20   | .28    | .00  |      |                       | .67*  | .81*   | .28  | .85* |
| MHCHI     | .38                   |       | -.14   | .41  | .33  |                       | .66*  | .58*   | .58* | .77* |
| MHOODS    | -.48                  | -.54* |        | .18  | .13  |                       | .77*  | .32    | .07  | .61* |
| LCHI      | .16                   | -.15  | .28    |      | .40  |                       | .23   | .24    | -.15 | .63* |
| MSOS      | -.03                  | -.11  | .13    | .56* |      |                       | .79*  | .66*   | .45  | .66* |
| <b>WK</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     | .45                   | .11   | .38    | .33  |      |                       | .87*  | .69*   | .80* | .85* |
| MHCHI     | .10                   |       | .58*   | .12  | .16  |                       | .90*  | .43    | .86* | .92* |
| MHOODS    | .02                   | -.28  |        | -.10 | -.11 |                       | .77*  | .54*   | .33  | .37  |
| LCHI      | -.16                  | -.03  | -.04   |      | .87* |                       | .95*  | .96*   | .67* | .93* |
| MSOS      | -.09                  | .27   | -.14   | .78* |      |                       | .80*  | .93*   | .33  | .87* |
| <b>PC</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     |                       | .85*  | .29    | -.02 | .12  |                       | .80*  | .53    | .87* | .34  |
| MHCHI     | .70                   |       | .52    | -.07 | .00  |                       | .92*  | .22    | .88* | .54  |
| MHOODS    | .26                   | .58   |        | -.05 | -.36 |                       | .52   | .19    | .36  | .44  |
| LCHI      | .14                   | -.22  | -.21   |      | .57  |                       | .03   | .24    | -.46 | .42  |
| MSOS      | .17                   | .16   | .06    | .35  |      |                       | .89*  | .90*   | .37  | .34  |
| <b>AS</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     |                       | .46   | -.13   | .32  | -.03 |                       | .77*  | .63*   | .33  | .81* |
| MHCHI     | .06                   |       | -.37   | .67* | .11  |                       | .80*  | .17    | .65* | .72* |
| MHOODS    | -.13                  | -.14  |        | -.54 | -.30 |                       | .79*  | .31    | -.25 | .58  |
| LCHI      | .42                   | .02   | -.28   |      | .48  |                       | .70*  | .77*   | .31  | .50  |
| MSOS      | .25                   | -.17  | -.17   | .24  |      |                       | .71*  | .58    | .53  | .81* |
| <b>MK</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     |                       | .69*  | -.08   | .41  | .46  |                       | .83*  | .74*   | .75* | .92* |
| MHCHI     | .45                   |       | .40    | .69* | .71* |                       | .85*  | .57    | .75* | .83* |
| MHOODS    | -.04                  | .01   |        | .68* | .53  |                       | .77*  | .47    | .62* | .79* |
| LCHI      | .19                   | .39   | .38    |      | .85* |                       | .90*  | .82*   | .75* | .87* |
| MSOS      | -.11                  | .17   | .36    | .81* |      |                       | .95*  | .82*   | .74* | .82* |
| <b>MC</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     |                       | .35   | -.33   | .04  | .20  |                       | .51   | .64*   | .09  | .41  |
| MHCHI     | .20                   |       | -.27   | -.18 | .01  |                       | .86*  | .44    | .20  | .32  |
| MHOODS    | -.09                  | -.04  |        | .08  | -.36 |                       | .69*  | .40    | .45  | .41  |
| LCHI      | .17                   | .21   | -.12   |      | .50  |                       | .71*  | .63*   | .64* | .71* |
| MSOS      | .07                   | -.03  | -.26   | .68* |      |                       | .59*  | .65*   | .29  | .77* |
| <b>EI</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     |                       | .59   | .33    | -.52 | .11  |                       | .88*  | .79*   | .82* | .79* |
| MHCHI     | .55                   |       | .23    | -.17 | .22  |                       | .73*  | .75*   | .67* | .72* |
| MHOODS    | -.17                  | .20   |        | -.01 | .47  |                       | .77*  | .33    | .78* | .64  |
| LCHI      | -.01                  | .14   | .29    |      | .51  |                       | .79*  | .30*   | .41  | .83* |
| MSOS      | -.13                  | .05   | .03    | .82* |      |                       | .10   | -.09   | .08  | -.10 |

Table D-2. (Concluded)

|           | <u>Hispanic vs White</u> |       |        |      |      | <u>Female vs Male</u> |       |        |       |      |
|-----------|--------------------------|-------|--------|------|------|-----------------------|-------|--------|-------|------|
|           | FCHIS                    | MHCHI | MHOODS | LCHI | MSOS | FCHIS                 | MHCHI | MHOODS | LCHI  | MSOS |
| <b>GS</b> |                          |       |        |      |      |                       |       |        |       |      |
| FCHIS     |                          | .92*  | .80*   | .70* | .54  |                       | .96*  | .23    | .80*  | .87* |
| MHCHI     | .86*                     |       | .74*   | .64* | .48  | .95*                  |       | .08    | .90*  | .93* |
| MHOODS    | .80*                     | .61*  |        | .56  | .57  | .21                   | .01   |        | -.11  | -.16 |
| LCHI      | .94*                     | .82*  | .80*   |      | .76* | .85*                  | .96*  | -.21   |       | .89* |
| MSOS      | .64*                     | .35   | .49    | .72* |      | .81*                  | .89*  | -.31   | .92*  |      |
| <b>AR</b> |                          |       |        |      |      |                       |       |        |       |      |
| FCHIS     |                          | .70*  | .57*   | .44  | .73* |                       | .92*  | -.02   | .59*  | .82* |
| MHCHI     | .89*                     |       | .46    | .60* | .75* | .96*                  |       | -.13   | .72*  | .87* |
| MHOODS    | .72*                     | .53   |        | .44  | .56* | .12                   | -.06  |        | -.61* | .03  |
| LCHI      | .80*                     | .92*  | .47    |      | .68* | .72*                  | .81*  | -.39   |       | .55* |
| MSOS      | .84*                     | .88*  | .50    | .87* |      | .77*                  | .79*  | -.00   | .88*  |      |
| <b>WK</b> |                          |       |        |      |      |                       |       |        |       |      |
| FCHIS     |                          | .96*  | .89*   | .87* | .74* |                       | .99*  | .83*   | .97*  | .98* |
| MHCHI     | .96*                     |       | .79*   | .94* | .86* | .99*                  |       | .84*   | .96*  | .98* |
| MHOODS    | .86*                     | .78*  |        | .61* | .42  | .84*                  | .78*  |        | .84*  | .80* |
| LCHI      | .97*                     | .96*  | .81*   |      | .95* | .71*                  | .79*  | .30    |       | .97* |
| MSOS      | .80*                     | .90*  | .47    | .84* |      | .98*                  | .99*  | .81*   | .77*  |      |
| <b>PC</b> |                          |       |        |      |      |                       |       |        |       |      |
| FCHIS     |                          | .33   | .41    | .64  | .02  |                       | .77*  | .33    | .65   | .45  |
| MHCHI     | .70                      |       | -.31   | .09  | .07  | .94*                  |       | .50    | .37   | .32  |
| MHOODS    | .52                      | .01   |        | .37  | .12  | .52                   | .58   |        | .58   | -.16 |
| LCHI      | .48                      | .88*  | -.35   |      | .07  | .74*                  | .83*  | .74*   |       | -.05 |
| MSOS      | .62                      | .50   | .12    | .84* |      | .13                   | .14   | -.09   | .27   |      |
| <b>AS</b> |                          |       |        |      |      |                       |       |        |       |      |
| FCHIS     |                          | .88*  | .49    | .76* | .92* |                       | .94*  | .88*   | .77*  | .55  |
| MHCHI     | .85*                     |       | .13    | .93* | .86* | .96*                  |       | .81*   | .79*  | .52  |
| MHOODS    | .58                      | .14   |        | -.06 | .52  | .88*                  | .80*  |        | .55   | .26  |
| LCHI      | .87*                     | .94*  | .23    |      | .79* | .78*                  | .83*  | .50    |       | .84* |
| MSOS      | .97*                     | .84*  | .57    | .90* |      | .51                   | .56   | .17    | .86*  |      |
| <b>MK</b> |                          |       |        |      |      |                       |       |        |       |      |
| FCHIS     |                          | .88*  | .64*   | .64* | .89* |                       | .39   | .09    | .48   | .77* |
| MHCHI     | .86*                     |       | .49    | .64* | .87* | .87*                  |       | .13    | .40   | .68* |
| MHOODS    | .61*                     | .43   |        | .46  | .70* | .11                   | .25   |        | -.45  | .39  |
| LCHI      | .75*                     | .63*  | .65*   |      | .80* | .78*                  | .70*  | -.31   |       | .43  |
| MSOS      | .84*                     | .87*  | .64*   | .69* |      | .77*                  | .80*  | .58    | .40   |      |
| <b>MC</b> |                          |       |        |      |      |                       |       |        |       |      |
| FCHIS     |                          | .90*  | .71*   | .58  | .80* |                       | .77*  | .50    | .86*  | .73* |
| MHCHI     | .93*                     |       | .72*   | .68* | .83* | .59*                  |       | .06    | .57   | .55  |
| MHOODS    | .80*                     | .69*  |        | .32  | .68* | .61*                  | .11   |        | .36   | .29  |
| LCHI      | .89*                     | .89*  | .64*   |      | .83* | .36                   | .63*  | .26    |       | .72* |
| MSOS      | .92*                     | .88*  | .74*   | .98* |      | .76*                  | .50   | .28    | .41   |      |
| <b>EI</b> |                          |       |        |      |      |                       |       |        |       |      |
| FCHIS     |                          | .78*  | .82*   | .64  | .84* |                       | .94*  | .58    | .16   | -.19 |
| MHCHI     | .75*                     |       | .61    | .45  | .56  | .91*                  |       | .40    | .23   | -.19 |
| MHOODS    | .63                      | .08   |        | .68* | .60  | .78*                  | .49   |        | .03   | -.06 |
| LCHI      | .86*                     | .58   | .73*   |      | .49  | .81*                  | .66*  | .63    |       | -.28 |
| MSOS      | .57                      | .44   | .29    | .26  |      | .75*                  | .67*  | .45    | .95*  |      |

**Note.** N = 1,000 for values above the diagonal and N = 2,000 for values below the diagonal; \* p < .001. 'xx' for correlation entries indicates missing values for Lord's Chi-Square and Modified Sum of Squares. These values were not computed since parameter estimates from LOGIST5 did not converge.

**Table D-3. Correlations between DIF Indices on ASVAB Form 16A by Comparison Group and Two Sample Sizes**

|           | <u>White vs White</u> |       |        |      |      | <u>Black vs White</u> |       |        |      |      |
|-----------|-----------------------|-------|--------|------|------|-----------------------|-------|--------|------|------|
|           | FCH15                 | MHCHI | MHOODS | LCHI | MSOS | FCH15                 | MHCHI | MHOODS | LCHI | MSOS |
| <b>GS</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     |                       | .62*  | .21    | .00  | .12  |                       | .89*  | .75*   | .92* | .75* |
| MHCHI     | .65*                  |       | .66*   | -.13 | .06  |                       | .92*  | .47    | .93* | .85* |
| MHOODS    | .02                   | -.05  |        | -.12 | .03  |                       | .77*  | .56    | .65* | .26  |
| LCHI      | -.00                  | .15   | .19    |      | .62* |                       | .96*  | .90*   | .74* | .76* |
| MSOS      | -.00                  | .10   | -.22   | .47  |      |                       | .85*  | .96*   | .42  | .89* |
| <b>AR</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     |                       | .44   | -.06   | .11  | .27  |                       | .74*  | .28    | .55* | -.16 |
| MHCHI     | .54                   |       | -.26   | .36  | .60* |                       | .85*  | -.10   | .83* | -.13 |
| MHOODS    | .09                   | -.35  |        | -.26 | -.35 |                       | .54   | .26    | -.34 | .34  |
| LCHI      | -.08                  | -.23  | .08    |      | .79* |                       | .28   | .59*   | -.38 | .05  |
| MSOS      | .02                   | -.18  | .14    | .51  |      |                       | .73*  | .78*   | -.11 | .66* |
| <b>WK</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     |                       | .39   | -.18   | .23  | .37  |                       | .82*  | .71*   | .81* | .65* |
| MHCHI     | .07                   |       | -.23   | -.03 | .23  |                       | .82*  | .40    | .57* | .83* |
| MHOODS    | .21                   | -.07  |        | .32  | .15  |                       | .72*  | .39    | .85* | .14  |
| LCHI      | .34                   | -.07  | -.01   |      | .46  |                       | .95*  | .69*   | .79* | .31  |
| MSOS      | .31                   | .13   | -.16   | .70* |      |                       | .81*  | .94*   | .30  | .69* |
| <b>PC</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     |                       | .27   | .40    | -.43 | -.29 |                       | .95*  | .91*   | .22  | .07  |
| MHCHI     | .40                   |       | .50    | .02  | .06  |                       | .86*  | .86*   | .28  | .12  |
| MHOODS    | .21                   | .15   |        | -.40 | -.43 |                       | .79*  | .47    | .21  | .09  |
| LCHI      | -.13                  | -.12  | -.30   |      | .60  |                       | -.16  | -.09   | -.11 | .96* |
| MSOS      | -.36                  | -.37  | -.21   | .62  |      |                       | .27   | .37    | -.05 | .71  |
| <b>AS</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     |                       | .82*  | .09    | .62* | .47  |                       | .64*  | .67*   | .40  | .78* |
| MHCHI     | .21                   |       | -.11   | .79* | .62* |                       | .62*  | -.01   | .83* | .75* |
| MHOODS    | -.18                  | .44   |        | -.26 | .04  |                       | .61*  | -.12   | -.21 | .45  |
| LCHI      | .34                   | .39   | -.21   |      | .74* |                       | xx    | xx     | xx   | .63* |
| MSOS      | .51                   | .06   | -.42   | .52  |      |                       | .00   | .00    | .00  | .00  |
| <b>MK</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     |                       | .39   | -.02   | -.35 | -.25 |                       | .75*  | .68*   | .61* | .92* |
| MHCHI     | .36                   |       | .16    | -.34 | -.17 |                       | .92*  | .36    | .82* | .80* |
| MHOODS    | .08                   | .23   |        | .10  | -.03 |                       | .57   | .29    | .46  | .55  |
| LCHI      | -.15                  | .08   | -.17   |      | .30  |                       | .69*  | .85*   | -.15 | .71* |
| MSOS      | -.11                  | -.17  | -.12   | .32  |      |                       | .97*  | .94*   | .50  | .77* |
| <b>MC</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     |                       | .27   | .02    | .44  | .77* |                       | .84*  | .41    | .89* | .87* |
| MHCHI     | .60*                  |       | -.45   | -.14 | .28  |                       | .81*  | .24    | .82* | .84* |
| MHOODS    | .16                   | -.15  |        | .25  | -.19 |                       | .35   | .18    | .50  | .28  |
| LCHI      | .22                   | .07   | -.15   |      | .60* |                       | .87*  | .90*   | .04  | .92* |
| MSOS      | .22                   | .22   | -.42   | .85* |      |                       | .73*  | .85*   | -.14 | .88* |
| <b>EI</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     |                       | .15   | -.30   | .22  | .25  |                       | .82*  | .63    | .73* | .72* |
| MHCHI     | .27                   |       | .29    | .43  | .38  |                       | .92*  | .31    | .82* | .83* |
| MHOODS    | -.28                  | -.31  |        | .23  | .29  |                       | .74*  | .44    | .21  | .17  |
| LCHI      | .15                   | .01   | .30    |      | .83* |                       | .75*  | .92*   | .18  | .97* |
| MSOS      | .17                   | .08   | .24    | .88* |      |                       | .82*  | .94*   | .32  | .98* |

Table D-3. (Concluded)

|        | <u>Hispanic vs White</u> |       |        |      |      | <u>Female vs Male</u> |       |        |      |      |
|--------|--------------------------|-------|--------|------|------|-----------------------|-------|--------|------|------|
|        | FCHIS                    | MHCHI | MHOODS | LCHI | MSOS | FCHIS                 | MHCHI | MHOODS | LCHI | MSOS |
| GS     |                          |       |        |      |      |                       |       |        |      |      |
| FCHIS  |                          | .94*  | .81*   | .89* | .80* |                       | .99*  | .69*   | .98* | .98* |
| MHCHI  | .95*                     |       | .67*   | .94* | .72* | -.26                  |       | .69*   | .99* | .98* |
| MHOODS | .88*                     | .79*  |        | .60* | .52  | -.12                  | .32   |        | .66* | .71* |
| LCHI   | .99*                     | .95*  | .89*   |      | .75* | .96*                  | -.23  | -.18   |      | .99* |
| MSOS   | .84*                     | .88*  | .53    | .84* |      | .99*                  | -.23  | -.16   | .97* |      |
| AR     |                          |       |        |      |      |                       |       |        |      |      |
| FCHIS  |                          | .72*  | .52    | .17  | .76* |                       | .85*  | -.13   | .79* | .80* |
| MHCHI  | .75*                     |       | .06    | .53  | .80* | .93*                  |       | -.28   | .85* | .88* |
| MHOODS | .39                      | -.10  |        | -.10 | .40  | .26                   | .12   |        | -.23 | -.26 |
| LCHI   | .25                      | .50   | -.26   |      | .70* | .58*                  | .72*  | -.50   |      | .95* |
| MSOS   | .73*                     | .81*  | .08    | .64* |      | .72*                  | .83*  | -.36   | .97* |      |
| WK     |                          |       |        |      |      |                       |       |        |      |      |
| FCHIS  |                          | .81*  | .55*   | .82* | .50  |                       | .98*  | .61*   | .78* | .91* |
| MHCHI  | .92*                     |       | .23    | .61* | .72* | .99*                  |       | .60*   | .79* | .91* |
| MHOODS | .46                      | .25   |        | .75* | -.02 | .63*                  | .66*  |        | .06  | .36  |
| LCHI   | .88*                     | .69*  | .67*   |      | .31  | .88*                  | .90*  | .86*   |      | .87* |
| MSOS   | .54*                     | .72*  | -.30   | .24  |      | .95*                  | .95*  | .51*   | .82* |      |
| PC     |                          |       |        |      |      |                       |       |        |      |      |
| FCHIS  |                          | .50   | .56    | .64  | .55  |                       | .89*  | .60    | .82* | .69  |
| MHCHI  | .94*                     |       | .38    | .16  | .13  | .96*                  |       | .80*   | .88* | .78* |
| MHOODS | .75*                     | .70   |        | .19  | .16  | .68                   | .65   |        | .69  | .64  |
| LCHI   | -.24                     | -.29  | -.49   |      | .94* | .87*                  | .88*  | .48    |      | .95* |
| MSOS   | .56                      | .34   | .17    | .38  |      | .86*                  | .91*  | .64    | .94* |      |
| AS     |                          |       |        |      |      |                       |       |        |      |      |
| FCHIS  |                          | .73*  | .34    | .90* | .85* |                       | .78*  | .77*   | .42  | .76* |
| MHCHI  | .73*                     |       | -.11   | .64* | .53  | .75*                  |       | .42    | .75* | .78* |
| MHOODS | .30                      | -.12  |        | .35  | .22  | .76*                  | .39   |        | .07  | .47  |
| LCHI   | .51                      | .77*  | -.46   |      | .90* | .59                   | .84*  | .20    |      | .81* |
| MSOS   | .88*                     | .53   | .37    | .43  |      | .91*                  | .80*  | .58    | .79* |      |
| MK     |                          |       |        |      |      |                       |       |        |      |      |
| FCHIS  |                          | .78*  | .58    | .77* | .85* |                       | .87*  | .08    | .79* | .53  |
| MHCHI  | .82*                     |       | .70*   | .82* | .91* | .97*                  |       | .09    | .81* | .49  |
| MHOODS | .55                      | .41   |        | .40  | .64* | .22                   | .26   |        | -.19 | .65* |
| LCHI   | .76*                     | .75*  | .03    |      | .88* | .83*                  | .79*  | -.04   |      | .52  |
| MSOS   | .90*                     | .78*  | .53    | .79* |      | .64*                  | .65*  | .50    | .73* |      |
| MC     |                          |       |        |      |      |                       |       |        |      |      |
| FCHIS  |                          | .49   | .48    | .11  | .47  |                       | .91*  | .78*   | .90* | .87* |
| MHCHI  | .68*                     |       | .06    | .48  | .65* | .92*                  |       | .56    | .85* | .86* |
| MHOODS | .42                      | .01   |        | -.22 | -.00 | .77*                  | .50   |        | .75* | .71* |
| LCHI   | .75*                     | .78*  | .45    |      | .81* | .96*                  | .90*  | .74*   |      | .88* |
| MSOS   | .39                      | .84*  | -.30   | .62* |      | .86*                  | .89*  | .52    | .91* |      |
| EI     |                          |       |        |      |      |                       |       |        |      |      |
| FCHIS  |                          | .76*  | .26    | .32  | .26  |                       | .72*  | .62    | .58  | .69* |
| MHCHI  | .94*                     |       | .17    | .61  | .55  | .83*                  |       | .15    | .42  | .72* |
| MHOODS | .76*                     | .68*  |        | -.43 | -.64 | .76*                  | .36   |        | .15  | .22  |
| LCHI   | .86*                     | .85*  | .44    |      | .92* | .81*                  | .80*  | .43    |      | .61  |
| MSOS   | .64                      | .70*  | .06    | .87* |      | .61                   | .79*  | .19    | .78* |      |

Note. N = 1,000 for values above the diagonal and N = 2,000 for values below the diagonal; \* p < .001. 'xx' for correlation entries indicates missing values for Lord's Chi-Square and Modified Sum of Squares. These values were not computed since parameter estimates from LOGIST5 did not converge.

**Table D-4. Correlations between DIF Indices on ASVAB Form 16B by Comparison Group and Two Sample Sizes**

|           | <u>White vs White</u> |       |        |      |      | <u>Black vs White</u> |       |        |      |      |
|-----------|-----------------------|-------|--------|------|------|-----------------------|-------|--------|------|------|
|           | FCH15                 | MHCHI | MHOODS | LCHI | MSOS | FCH15                 | MHCHI | MHOODS | LCHI | MSOS |
| <b>GS</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     | .54                   | -.01  | -.14   | .13  |      |                       | .92*  | .67*   | .91* | .86* |
| MHCHI     | .35                   | -.17  | -.05   | .08  |      | .93*                  |       | .44    | .86* | .88* |
| MHOODS    | -.10                  | .01   | -.05   | .29  |      | .86*                  | .70*  |        | .56  | .56  |
| LCHI      | .15                   | -.03  | .05    | .39  |      | .87*                  | .83*  | .72*   |      | .86* |
| MSOS      | -.15                  | .10   | .15    | .37  |      | .89*                  | .95*  | .72*   | .88* |      |
| <b>AR</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     | .49                   | -.02  | .19    | .19  |      |                       | .76*  | .62*   | .66* | .85* |
| MHCHI     | .59*                  | -.03  | .08    | .02  |      | .77*                  |       | .35    | .82* | .75* |
| MHOODS    | -.21                  | -.24  | .10    | -.28 |      | .71*                  | .19   |        | .42  | .62* |
| LCHI      | .04                   | -.14  | .10    | .69* |      | .74*                  | .70*  | .51    |      | .71* |
| MSOS      | -.01                  | -.04  | -.15   | .64* |      | .91*                  | .81*  | .54    | .73* |      |
| <b>WK</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     | .84*                  | .21   | -.01   | .29  |      |                       | .96*  | .67*   | .64* | .97* |
| MHCHI     | .15                   | .10   | .09    | .35  |      | .95*                  |       | .54*   | .55* | .94* |
| MHOODS    | -.02                  | -.00  | .03    | .24  |      | .79*                  | .61*  |        | .74* | .74* |
| LCHI      | .08                   | .12   | -.03   | .56* |      | .74*                  | .62*  | .79*   |      | .74* |
| MSOS      | .22                   | .35   | -.09   | .74* |      | .98*                  | .94*  | .76*   | .78* |      |
| <b>PC</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     | .83*                  | .03   | .41    | .46  |      |                       | .85*  | -.26   | .59  | .49  |
| MHCHI     | .44                   | .42   | .42    | .20  |      | .93*                  |       | -.36   | .79* | .67  |
| MHOODS    | .61                   | .41   | .04    | -.20 |      | .16                   | -.37  |        | -.54 | .03  |
| LCHI      | -.22                  | -.16  | -.26   | .11  |      | .66                   | .64   | .20    |      | .76* |
| MSOS      | .05                   | .34   | -.40   | .12  |      | .81*                  | .78*  | .04    | .95* |      |
| <b>AS</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     | .18                   | .09   | .10    | .35  |      |                       | .66*  | .75*   | .04  | .80* |
| MHCHI     | .46                   | -.22  | .24    | .03  |      | .72*                  |       | .22    | .39  | .73* |
| MHOODS    | -.11                  | -.34  | -.15   | .06  |      | .87*                  | .37   |        | -.33 | .60* |
| LCHI      | -.01                  | -.12  | .06    | .39  |      | .22                   | .67*  | -.18   |      | .38  |
| MSOS      | -.04                  | -.04  | .08    | .35  |      | .79*                  | .75*  | .58    | .65* |      |
| <b>MK</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     | .41                   | -.39  | -.10   | -.20 |      |                       | .93*  | .73*   | .74* | .94* |
| MHCHI     | .50                   | -.59* | .36    | .08  |      | .90*                  |       | .62*   | .82* | .90* |
| MHOODS    | .06                   | .06   | .08    | .27  |      | .80*                  | .55   |        | .25  | .81* |
| LCHI      | .32                   | -.07  | -.09   | .57  |      | .64*                  | .81*  | .12    |      | .75* |
| MSOS      | .41                   | .15   | .06    | .32  |      | .97*                  | .91*  | .78*   | .68* |      |
| <b>MC</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     | .79*                  | .22   | -.32   | .35  |      |                       | .71*  | .56    | .51  | .49  |
| MHCHI     | .35                   | .19   | -.32   | .32  |      | .70*                  |       | .09    | .27  | .41  |
| MHOODS    | -.12                  | -.06  | .05    | -.25 |      | .83*                  | .37   |        | .20  | .40  |
| LCHI      | -.37                  | -.23  | .13    | .35  |      | .74*                  | .57   | .57    |      | .39  |
| MSOS      | -.14                  | -.28  | -.01   | .52  |      | .69*                  | .50   | .51    | .88* |      |
| <b>EI</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     | .14                   | .05   | .26    | .34  |      |                       | .89*  | .74*   | .85* | .81* |
| MHCHI     | .52                   | .14   | .36    | .15  |      | .90*                  |       | .52    | .70* | .76* |
| MHOODS    | .02                   | .68*  | .60    | .39  |      | .70*                  | .37   |        | .84* | .79* |
| LCHI      | -.04                  | -.10  | -.09   | .55  |      | .93*                  | .85*  | .55    |      | .87* |
| MSOS      | .09                   | .20   | .14    | .63  |      | .79*                  | .69*  | .42    | .90* |      |

Table D-4. (Concluded)

|        | <u>Hispanic vs White</u> |       |        |      |      | <u>Female vs Male</u> |       |        |      |      |
|--------|--------------------------|-------|--------|------|------|-----------------------|-------|--------|------|------|
|        | FCH15                    | MHCHI | MHOODS | LCHI | MSOS | FCH15                 | MHCHI | MHOODS | LCHI | MSOS |
| GS     |                          |       |        |      |      |                       |       |        |      |      |
| FCH15  |                          | .91*  | .66*   | .49  | .90* |                       | .99*  | .79*   | .90* | .96* |
| MHCHI  | .94*                     |       | .47    | .65* | .93* |                       | .99*  | .77*   | .92* | .98* |
| MHOODS | .83*                     | .67*  |        | -.15 | .58  |                       | .87*  | .83*   | .56  | .75* |
| LCHI   | .90*                     | .94*  | .60*   |      | .65* |                       | .76*  | .79*   | .43  | .93* |
| MSOS   | .92*                     | .89*  | .67*   | .93* |      |                       | .99*  | .99*   | .85* | .78* |
| AR     |                          |       |        |      |      |                       |       |        |      |      |
| FCH15  |                          | .48   | .26    | .38  | .57* |                       | .94*  | .38    | .84* | .76* |
| MHCHI  | .58*                     |       | -.20   | .66* | .63* |                       | .97*  | .29    | .90* | .83* |
| MHOODS | .35                      | -.25  |        | -.44 | -.07 |                       | .17   | .13    | .16  | .40  |
| LCHI   | .50                      | .31   | .52    |      | .86* |                       | .89*  | .93*   | -.01 | .93* |
| MSOS   | .81*                     | .67*  | .16    | .50  |      |                       | .73*  | .80*   | .33  | .86* |
| WK     |                          |       |        |      |      |                       |       |        |      |      |
| FCH15  |                          | .95*  | .66*   | .69* | .90* |                       | .97*  | .50    | .56* | .95* |
| MHCHI  | .95*                     |       | .43    | .61* | .92* |                       | .99*  | .45    | .60* | .93* |
| MHOODS | .50                      | .39   |        | .49  | .55* |                       | .34   | .30    | -.33 | .63* |
| LCHI   | .68*                     | .54*  | .61*   |      | .66* |                       | .63*  | .68*   | -.39 | .42  |
| MSOS   | .91*                     | .95*  | .37    | .56* |      |                       | .95*  | .92*   | .51* | .44  |
| PC     |                          |       |        |      |      |                       |       |        |      |      |
| FCH15  |                          | .88*  | .74*   | .29  | .39  |                       | .87*  | .19    | .55  | .81* |
| MHCHI  | .79*                     |       | .69    | .13  | .32  |                       | .92*  | .17    | .47  | .73* |
| MHOODS | .76*                     | .51   |        | .12  | .30  |                       | -.30  | -.27   | -.04 | -.16 |
| LCHI   | .80*                     | .78*  | .74*   |      | .45  |                       | .87*  | .86*   | -.61 | .75* |
| MSOS   | .88*                     | .73   | .59    | .72  |      |                       | .89*  | .87*   | -.18 | .78* |
| AS     |                          |       |        |      |      |                       |       |        |      |      |
| FCH15  |                          | .74*  | -.04   | .67* | .75* |                       | .44   | .55    | .14  | .89* |
| MHCHI  | .57                      |       | -.40   | .93* | .63* |                       | .78*  | -.19   | .74* | .37  |
| MHOODS | .38                      | -.31  |        | -.53 | .21  |                       | .72*  | .28    | -.41 | .50  |
| LCHI   | .47                      | .91*  | -.45   |      | .65* |                       | .45   | .78*   | -.03 | .20  |
| MSOS   | .80*                     | .75*  | .16    | .73* |      |                       | .91*  | .83*   | .49  | .69* |
| MK     |                          |       |        |      |      |                       |       |        |      |      |
| FCH15  |                          | .81*  | .42    | .72* | .78* |                       | .97*  | .49    | .80* | .63* |
| MHCHI  | .85*                     |       | .42    | .71* | .79* |                       | .95*  | .57    | .74* | .65* |
| MHOODS | .57                      | .62*  |        | .07  | .66* |                       | .36   | .34    | .08  | .58  |
| LCHI   | .44                      | .49   | -.12   |      | .65* |                       | .75*  | .78*   | -.04 | .62* |
| MSOS   | .84*                     | .85*  | .81*   | .32  |      |                       | .64*  | .62*   | .74* | .49  |
| MC     |                          |       |        |      |      |                       |       |        |      |      |
| FCH15  |                          | .61*  | .43    | .36  | .09  |                       | .84*  | .69*   | .90* | .81* |
| MHCHI  | .54                      |       | -.00   | .33  | -.02 |                       | .87*  | .35    | .78* | .88* |
| MHOODS | .73*                     | .24   |        | .58  | -.06 |                       | .70*  | .32    | .61* | .40  |
| LCHI   | .68*                     | .52   | .67*   |      | -.38 |                       | .97*  | .79*   | .76* | .81* |
| MSOS   | .42                      | .36   | .23    | .40  |      |                       | .86*  | .91*   | .43  | .86* |
| EI     |                          |       |        |      |      |                       |       |        |      |      |
| FCH15  |                          | .77*  | .52    | .69* | .59  |                       | .70*  | .55    | .87* | .75* |
| MHCHI  | .93*                     |       | .50    | .71* | .74* |                       | .78*  | .24    | .48  | .69* |
| MHOODS | .81*                     | .56   |        | .85* | .59  |                       | .92*  | .60    | .58  | .32  |
| LCHI   | .93*                     | .89*  | .70*   |      | .70* |                       | .55   | .84*   | .35  | .54  |
| MSOS   | .73*                     | .75*  | .44    | .87* |      |                       | .83*  | .79*   | .69* | .69* |

Note. N = 1,000 for values above the diagonal and N = 2,000 for values below the diagonal; \* p < .001. 'xx' for correlation entries indicates missing values for Lord's Chi-Square and Modified Sum of Squares. These values were not computed since parameter estimates from LOGIST5 did not converge.

**Table D-5. Correlations between DIF Indices on ASVAB Form 17A by Comparison Group and Two Sample Sizes**

|           | White vs White |       |        |      |      | Black vs White |       |        |      |      |
|-----------|----------------|-------|--------|------|------|----------------|-------|--------|------|------|
|           | FCH15          | MHCHI | MHOODS | LCHI | MSOS | FCH15          | MHCHI | MHOODS | LCHI | MSOS |
| <b>GS</b> |                |       |        |      |      |                |       |        |      |      |
| FCH15     | .39            | -.22  | .34    | .16  |      |                | .94*  | .61*   | .63* | .71* |
| MHCHI     | .29            | -.25  | .39    | .26  |      | .92*           | .47   | .72*   | .59  |      |
| MHOODS    | -.04           | .28   | -.32   | -.46 |      | .64*           | .36   | .36    | .22  |      |
| LCHI      | .17            | .17   | -.14   | .58  |      | .85*           | .73*  | .77*   | .30  |      |
| MSOS      | .12            | .37   | -.24   | .53  |      | .65*           | .72*  | .02    | .93* |      |
| <b>AR</b> |                |       |        |      |      |                |       |        |      |      |
| FCH15     | .28            | .25   | -.20   | -.08 |      |                | .83*  | .81*   | .54  | .84* |
| MHCHI     | .16            | .24   | -.18   | -.19 |      | .62*           | .48   | .80*   | .81* |      |
| MHOODS    | .40            | .08   | -.10   | .20  |      | .70*           | -.05  | .08    | .62* |      |
| LCHI      | .10            | -.15  | .01    | .58* |      | .55            | .57*  | .20    | .73* |      |
| MSOS      | .20            | .36   | -.29   | .55* |      | .74*           | .73*  | .21    | .67* |      |
| <b>WK</b> |                |       |        |      |      |                |       |        |      |      |
| FCH15     | .56*           | -.33  | -.04   | -.05 |      |                | .93*  | .60*   | .87* | .88* |
| MHCHI     | .33            | .59*  | .21    | .18  |      | .82*           | .43   | .92*   | .93* |      |
| MHOODS    | -.07           | .28   | -.12   | -.10 |      | .70*           | .33   | .41    | .37  |      |
| LCHI      | .21            | -.06  | -.05   | .66* |      | .76*           | .92*  | .33    | .82* |      |
| MSOS      | -.09           | -.03  | -.04   | .66* |      | .63*           | .85*  | -.00   | .75* |      |
| <b>PC</b> |                |       |        |      |      |                |       |        |      |      |
| FCH15     | .71            | .38   | .03    | .26  |      |                | .73*  | .25    | .34  | .78* |
| MHCHI     | .27            | .38   | .09    | .15  |      | .43            | -.29  | .64    | .77* |      |
| MHOODS    | .14            | -.14  | -.01   | -.15 |      | .42            | -.49  | -.30   | .03  |      |
| LCHI      | -.19           | -.34  | .05    | .58  |      | .27            | .97*  | -.60   | .64  |      |
| MSOS      | -.36           | -.35  | .11    | .84* |      | .48            | .59   | .07    | .95* |      |
| <b>AS</b> |                |       |        |      |      |                |       |        |      |      |
| FCH15     | .69*           | -.06  | -.15   | .16  |      |                | .90*  | .75*   | .62* | .93* |
| MHCHI     | .37            | .02   | -.04   | -.07 |      | .93*           | .58   | .58    | .79* |      |
| MHOODS    | .08            | .21   | -.13   | -.16 |      | .86*           | .65*  | .52    | .82* |      |
| LCHI      | -.01           | -.39  | .04    | .56  |      | .53            | .59   | .28    | .57  |      |
| MSOS      | .10            | -.07  | .24    | .70* |      | .93*           | .83*  | .84*   | .69* |      |
| <b>MK</b> |                |       |        |      |      |                |       |        |      |      |
| FCH15     | .53            | .12   | .20    | .26  |      |                | .77*  | .57    | .69* | .86* |
| MHCHI     | .35            | .58   | .16    | .38  |      | .84*           | .04   | .19    | .88* | .83* |
| MHOODS    | -.25           | -.50  | -.35   | -.12 |      | .40            | .62*  | .81*   | .08  | .55  |
| LCHI      | -.15           | .17   | -.10   | .37  |      | .62*           | .81*  | -.34   | .84* |      |
| MSOS      | -.04           | .62*  | -.37   | .32  |      | .91*           | .89*  | .33    | .73* |      |
| <b>MC</b> |                |       |        |      |      |                |       |        |      |      |
| FCH15     | .57            | -.31  | .21    | .13  |      |                | .73*  | .56    | .72* | .86* |
| MHCHI     | .43            | -.39  | .33    | .26  |      | .58            | -.00  | .17    | .62* | .57  |
| MHOODS    | -.14           | .27   | -.20   | .11  |      | .66*           | -.28  | .12    | .48  |      |
| LCHI      | .09            | .02   | .12    | .42  |      | .28            | .52   | -.12   | .84* |      |
| MSOS      | .30            | .18   | .19    | .69* |      | .79*           | .60*  | .44    | .67* |      |
| <b>EI</b> |                |       |        |      |      |                |       |        |      |      |
| FCH15     | .10            | .06   | -.03   | .18  |      |                | .57   | .38    | .63  | .56  |
| MHCHI     | .63            | -.18  | -.08   | .10  |      | .51            | -.06  | -.01   | .36  | .36  |
| MHOODS    | -.31           | -.49  | .31    | .27  |      | .61            | -.77* | .58    | .76* | .07  |
| LCHI      | -.14           | -.32  | -.04   | .38  |      | .28            | .56   | .56    | .45  |      |
| MSOS      | .11            | -.13  | .02    | .51  |      | .65*           | .35   | .14    | .56  |      |

Table D-5. (Concluded)

|           | Hispanic vs White |       |        |      |      | Female vs Male |       |        |      |      |
|-----------|-------------------|-------|--------|------|------|----------------|-------|--------|------|------|
|           | FCHIS             | MHCHI | MHOODS | LCHI | MSOS | FCHIS          | MHCHI | MHOODS | LCHI | MSOS |
| <b>GS</b> |                   |       |        |      |      |                |       |        |      |      |
| FCHIS     |                   | .98*  | .81*   | .79* | .96* |                | .98*  | .46    | .95* | .56  |
| MHCHI     | .99*              |       | .76*   | .81* | .97* | .96*           |       | .41    | .96* | .47  |
| MHOODS    | .89*              | .85*  |        | .55  | .81* | .58            | .43   |        | .52  | .26  |
| LCHI      | .85*              | .86*  | .74*   |      | .87* | .91*           | .92*  | .45    |      | .72* |
| MSOS      | .97*              | .98*  | .88*   | .89* |      | .23            | .27   | .37    | .39  |      |
| <b>AR</b> |                   |       |        |      |      |                |       |        |      |      |
| FCHIS     |                   | .38   | .42    | .02  | .48  |                | .91*  | .53    | .86* | .87* |
| MHCHI     | .79*              |       | -.18   | .53  | .56* | .89*           |       | .43    | .91* | .92* |
| MHOODS    | .59*              | .23   |        | -.52 | -.05 | .47            | .25   |        | .27  | .63* |
| LCHI      | .33               | .36   | .37    |      | .80* | .83*           | .93*  | .14    |      | .88* |
| MSOS      | .33               | .35   | .20    | .44  |      | .91*           | .95*  | .34    | .95* |      |
| <b>WK</b> |                   |       |        |      |      |                |       |        |      |      |
| FCHIS     |                   | .95*  | .76*   | .89* | .45  |                | .99*  | .77*   | .89* | .98* |
| MHCHI     | .92*              |       | .63*   | .86* | .58* | 1.00*          |       | .77*   | .90* | .99* |
| MHOODS    | .77*              | .67*  |        | .65* | .07  | .77*           | .76*  |        | .47  | .74* |
| LCHI      | .95*              | .94*  | .69*   |      | .46  | .95*           | .96*  | .63*   |      | .91* |
| MSOS      | .73*              | .86*  | .40    | .74* |      | .99*           | .99*  | .77*   | .95* |      |
| <b>PC</b> |                   |       |        |      |      |                |       |        |      |      |
| FCHIS     |                   | .85*  | .16    | .74  | .40  |                | .57   | .55    | .12  | .76* |
| MHCHI     | .72               |       | .05    | .77* | .41  | .51            |       | .51    | -.20 | .60  |
| MHOODS    | .06               | -.14  |        | .32  | .32  | -.06           | .23   |        | -.26 | .57  |
| LCHI      | -.03              | -.36  | -.41   |      | .72  | -.16           | -.10  | -.37   |      | -.08 |
| MSOS      | .28               | -.19  | -.00   | .22  |      | .48            | .10   | .10    | -.15 |      |
| <b>AS</b> |                   |       |        |      |      |                |       |        |      |      |
| FCHIS     |                   | .94*  | .36    | .95* | .95* |                | .55   | .77*   | .47  | .25  |
| MHCHI     | .94*              |       | .10    | .98* | .98* | .51            |       | .40    | .48  | .44  |
| MHOODS    | .48               | .22   |        | .15  | .13  | .60*           | .09   |        | .37  | .49  |
| LCHI      | .86*              | .95*  | .05    |      | .99* | .22            | .49   | .04    |      | .73* |
| MSOS      | .97*              | .92*  | .50    | .86* |      | .67*           | .51   | .11    | .57  |      |
| <b>MK</b> |                   |       |        |      |      |                |       |        |      |      |
| FCHIS     |                   | .90*  | .49    | .89* | .81* |                | .95*  | -.31   | .75* | .88* |
| MHCHI     | .69*              |       | .50    | .77* | .76* | .86*           |       | -.29   | .80* | .93* |
| MHOODS    | .34               | -.19  |        | .24  | .61* | -.18           | .08   |        | -.17 | .40  |
| LCHI      | .71*              | .80*  | -.14   |      | .83* | .88*           | .96*  | -.15   |      | .91* |
| MSOS      | .77*              | .76*  | .28    | .82* |      | .86*           | .94*  | .09    | .93* |      |
| <b>MC</b> |                   |       |        |      |      |                |       |        |      |      |
| FCHIS     |                   | .30   | .18    | .64* | .71* |                | .78*  | .40    | .46  | .55  |
| MHCHI     | .70*              |       | -.27   | .47  | .49  | .30            |       | .09    | .51  | .36  |
| MHOODS    | .70*              | .35   |        | .07  | -.02 | .48            | -.13  |        | -.17 | .21  |
| LCHI      | .45               | .76*  | -.01   |      | .95* | .45            | .33   | -.05   |      | .70* |
| MSOS      | .79*              | .87*  | .55    | .73* |      | .74*           | .15   | .17    | .68* |      |
| <b>EI</b> |                   |       |        |      |      |                |       |        |      |      |
| FCHIS     |                   | .79*  | .28    | .81* | .73* |                | .70*  | .70*   | .41  | .76* |
| MHCHI     | .83*              |       | .33    | .83* | .60  | .76*           |       | .35    | .32  | .65* |
| MHOODS    | .39               | .46   |        | .57  | .10  | .54            | -.08  |        | .64  | .56  |
| LCHI      | .71*              | .87*  | .60    |      | .71* | .67*           | .21   | .86*   |      | .66* |
| MSOS      | .74*              | .52   | -.06   | .42  |      | .90*           | .65*  | .59    | .64  |      |

Note. N = 1,000 for values above the diagonal and N = 2,000 for values below the diagonal; \* p < .001. 'xx' for correlation entries indicates missing values for Lord's Chi-Square and Modified Sum of Squares. These values were not computed since parameter estimates from LOGIST5 did not converge.

**Table D-6. Correlations between DIF Indices on ASVAB Form 17B by Comparison Group and Two Sample Sizes**

|           | <u>White vs White</u> |       |        |      |      | <u>Black vs White</u> |       |        |      |      |
|-----------|-----------------------|-------|--------|------|------|-----------------------|-------|--------|------|------|
|           | FCH15                 | MHCHI | MHOODS | LCHI | MSOS | FCH15                 | MHCHI | MHOODS | LCHI | MSOS |
| <b>GS</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     |                       | .30   | .06    | .02  | .39  |                       | .95*  | .52    | .38  | .76* |
| MHCHI     | .48                   |       | -.16   | -.04 | .37  |                       | .95*  | .51    | .48  | .73* |
| MHOODS    | -.25                  | -.49  |        | -.08 | -.21 |                       | .75*  | .56    | .08  | .17  |
| LCHI      | -.16                  | -.19  | .09    |      | .51  |                       | .95*  | .88*   | .75* | .37  |
| MSOS      | -.12                  | -.27  | -.05   | .62* |      |                       | .93*  | .91*   | .67* | .93* |
| <b>AR</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     |                       | .13   | .03    | .25  | .14  |                       | .85*  | .68*   | .64* | .80* |
| MHCHI     | .63*                  |       | .07    | .01  | .11  |                       | .71*  | .48    | .57* | .87* |
| MHOODS    | .13                   | .17   |        | -.16 | -.34 |                       | .79*  | .27    | .59* | .49  |
| LCHI      | -.09                  | -.17  | .10    |      | .45  |                       | .64*  | .64*   | .47  | .68* |
| MSOS      | -.06                  | -.01  | -.03   | .76* |      |                       | .60*  | .76*   | .36  | .95* |
| <b>WK</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     |                       | .29   | .00    | -.04 | .15  |                       | .94*  | .68*   | .89* | .96* |
| MHCHI     | .38                   |       | -.02   | -.32 | .09  |                       | .94*  | .52*   | .87* | .93* |
| MHOODS    | .03                   | .28   |        | .17  | .03  |                       | .75*  | .58*   | .66* | .70* |
| LCHI      | .37                   | .17   | -.05   |      | .55* |                       | .94*  | .93*   | .67* | .90* |
| MSOS      | .40                   | .26   | -.19   | .47  |      |                       | .98*  | .96*   | .75* | .95* |
| <b>PC</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     |                       | .30   | .12    | .10  | .35  |                       | .50   | .76*   | -.56 | .08  |
| MHCHI     | .47                   |       | -.04   | .76* | .13  |                       | .73*  | .22    | .13  | .09  |
| MHOODS    | .28                   | .59   |        | -.33 | .12  |                       | .73   | .16    | -.74 | .16  |
| LCHI      | xx                    | xx    | xx     |      | -.14 |                       | xx    | xx     | xx   | -.41 |
| MSOS      | .00                   | .00   | .00    | .00  |      |                       | .00   | .00    | .00  |      |
| <b>AS</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     |                       | .32   | -.15   | .07  | .36  |                       | .89*  | .91*   | .67* | .95* |
| MHCHI     | .38                   |       | -.12   | .45  | .81* |                       | .89*  | .75*   | .77* | .83* |
| MHOODS    | -.17                  | -.15  |        | -.43 | -.15 |                       | .81*  | .59    | .52  | .88* |
| LCHI      | .08                   | -.07  | .10    |      | .52  |                       | .75*  | .75*   | .56  | .74* |
| MSOS      | .07                   | -.08  | .31    | .68* |      |                       | .97*  | .87*   | .80* | .79* |
| <b>MK</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     |                       | .61*  | .39    | .10  | -.12 |                       | .86*  | .05    | .81* | .90* |
| MHCHI     | .74*                  |       | .51    | -.17 | -.12 |                       | .81*  | -.20   | .80* | .73* |
| MHOODS    | -.25                  | -.18  |        | .04  | -.11 |                       | .35   | -.02   | -.43 | -.08 |
| LCHI      | .06                   | -.02  | -.10   |      | .58  |                       | .64*  | .84*   | -.38 | .90* |
| MSOS      | .19                   | .01   | -.03   | .52  |      |                       | .89*  | .65*   | .35  | .61* |
| <b>MC</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     |                       | .37   | -.08   | -.10 | .03  |                       | .82*  | .67*   | .58  | .81* |
| MHCHI     | .56                   |       | .06    | -.09 | -.05 |                       | .70*  | .32    | .36  | .80* |
| MHOODS    | .20                   | .37   |        | .36  | .16  |                       | .78*  | .25    | .45  | .59  |
| LCHI      | -.18                  | -.03  | -.21   |      | .65* |                       | .45   | .53    | .05  | .65* |
| MSOS      | .12                   | .25   | -.33   | .41  |      |                       | .65*  | .90*   | .27  | .59* |
| <b>EI</b> |                       |       |        |      |      |                       |       |        |      |      |
| FCH15     |                       | .55   | -.04   | -.08 | .21  |                       | .66*  | .36    | .57  | .56  |
| MHCHI     | .56                   |       | .39    | -.23 | -.01 |                       | .75*  | -.21   | .19  | .26  |
| MHOODS    | -.22                  | -.16  |        | -.06 | -.12 |                       | .14   | -.46   | .52  | .27  |
| LCHI      | -.06                  | .10   | -.04   |      | .89* |                       | .45   | -.16   | .74* | .85* |
| MSOS      | -.07                  | .29   | -.09   | .65  |      |                       | .28   | .09    | -.06 | .30  |

Table D-6. (Concluded)

|           | Hispanic vs White |       |        |      |      | Female vs Male |       |        |      |       |
|-----------|-------------------|-------|--------|------|------|----------------|-------|--------|------|-------|
|           | FCH15             | MHCHI | MHOODS | LCHI | MSOS | FCH15          | MHCHI | MHOODS | LCHI | MSOS  |
| <b>GS</b> |                   |       |        |      |      |                |       |        |      |       |
| FCH15     |                   | .98*  | .90*   | .87* | .97* |                | .93*  | .38    | .82* | .83*  |
| MHCHI     | .99*              |       | .87*   | .90* | .98* | .93*           |       | .19    | .65* | .82*  |
| MHOODS    | .80*              | .72*  |        | .69* | .87* | .42            | .18   |        | .54  | -.05  |
| LCHI      | .91*              | .90*  | .59*   |      | .94* | .89*           | .94*  | .10    |      | .69*  |
| MSOS      | .98*              | .96*  | .76*   | .96* |      | .77*           | .86*  | -.20   | .93* |       |
| <b>AR</b> |                   |       |        |      |      |                |       |        |      |       |
| FCH15     |                   | .73*  | .47    | .43  | .60* |                | .97*  | .91*   | .96* | .97*  |
| MHCHI     | .84*              |       | .16    | .43  | .45  | .97*           |       | .88*   | .98* | .99*  |
| MHOODS    | .22               | -.19  |        | .18  | .26  | .90*           | .86*  |        | .86* | .87*  |
| LCHI      | .77*              | .67*  | .18    |      | .87* | .86*           | .89*  | .65*   |      | 1.00* |
| MSOS      | .84*              | .79*  | .06    | .96* |      | .97*           | .98*  | .84*   | .91* |       |
| <b>WK</b> |                   |       |        |      |      |                |       |        |      |       |
| FCH15     |                   | .98*  | .82*   | .73* | .92* |                | .93*  | -.21   | .88* | .88*  |
| MHCHI     | .98*              |       | .76*   | .72* | .94* | .97*           |       | -.04   | .87* | .83*  |
| MHOODS    | .78*              | .73*  |        | .60* | .72* | -.14           | -.08  |        | -.02 | -.19  |
| LCHI      | .84*              | .77*  | .67*   |      | .63* | .93*           | .92*  | .08    |      | .89*  |
| MSOS      | .80*              | .85*  | .40    | .58* |      | .88*           | .88*  | -.30   | .87* |       |
| <b>PC</b> |                   |       |        |      |      |                |       |        |      |       |
| FCH15     |                   | .82*  | .53    | .88* | .33  |                | .99*  | .87*   | .06  | .03   |
| MHCHI     | .65               |       | .55    | .71  | .16  | .99*           |       | .86*   | .08  | -.11  |
| MHOODS    | .42               | -.11  |        | .62  | .23  | .83*           | .87*  |        | -.33 | .05   |
| LCHI      | xx                | xx    | xx     |      | .37  | .93*           | .93*  | .91*   |      | -.01  |
| MSOS      | .00               | .00   | .00    | .00  |      | .38            | .36   | .41    | .48  |       |
| <b>AS</b> |                   |       |        |      |      |                |       |        |      |       |
| FCH15     |                   | .94*  | .65*   | .85* | .94* |                | .59*  | .66*   | .39  | .61*  |
| MHCHI     | .96*              |       | .57    | .88* | .96* | .73*           |       | .37    | .31  | .30   |
| MHOODS    | .62*              | .46   |        | .43  | .51  | .67*           | .40   |        | .46  | .25   |
| LCHI      | .86*              | .91*  | .33    |      | .94* | .38            | .32   | .47    |      | -.06  |
| MSOS      | .97*              | .98*  | .47    | .92* |      | .59*           | .32   | .12    | .34  |       |
| <b>MK</b> |                   |       |        |      |      |                |       |        |      |       |
| FCH15     |                   | .42   | .03    | .59* | .58  |                | .88*  | .07    | .73* | .72*  |
| MHCHI     | .85*              |       | .12    | .27  | .46  | .98*           |       | .20    | .73* | .80*  |
| MHOODS    | .59*              | .37   |        | -.22 | .09  | -.02           | -.00  |        | -.01 | .26   |
| LCHI      | .55               | .65*  | -.17   |      | .86* | .88*           | .89*  | -.10   |      | .93*  |
| MSOS      | .84*              | .75*  | .29    | .81* |      | .85*           | .88*  | .26    | .90* |       |
| <b>MC</b> |                   |       |        |      |      |                |       |        |      |       |
| FCH15     |                   | .76*  | .46    | .41  | .73* |                | .61*  | .57    | .24  | .59*  |
| MHCHI     | .64*              |       | .08    | .33  | .49  | .77*           |       | .34    | .15  | .45   |
| MHOODS    | .68*              | .26   |        | .19  | .50  | .52            | -.01  |        | -.11 | .43   |
| LCHI      | .31               | .50   | -.25   |      | .84* | .37            | .55   | -.22   |      | .60*  |
| MSOS      | .68*              | .60*  | .36    | .76* |      | .81*           | .68*  | .34    | .47  |       |
| <b>E1</b> |                   |       |        |      |      |                |       |        |      |       |
| FCH15     |                   | .67*  | .40    | .68* | .62  |                | .80*  | .05    | .82* | .55   |
| MHCHI     | .91*              |       | -.12   | .30  | .30  | .81*           |       | -.23   | .72* | .72*  |
| MHOODS    | .50               | .33   |        | .60  | .30  | .28            | -.26  |        | -.20 | -.41  |
| LCHI      | .67*              | .62   | .76*   |      | .78* | .79*           | .54   | .29    |      | .75*  |
| MSOS      | .74*              | .77*  | .22    | .56  |      | .75*           | .61   | .07    | .85* |       |

**Note.** N = 1,000 for values above the diagonal and N = 2,000 for values below the diagonal; \* p < .001. 'xx' for correlation entries indicates missing values for Lord's Chi-Square and Modified Sum of Squares. These values were not computed since parameter estimates from LOGIST5 did not converge.